Sequence Listing

<110> FREDERIC DE SAUVAGE
GRETCHEN FRANTZ
KENNETH J. HILLAN
PAUL POLAKIS
ANDREW POLSON
VICTORIA SMITH
SUSAN D. SPENCER
THOMAS D. WU
ZEMIN ZHANG

<120> COMPOSITIONS AND METHODS FOR THE DIAGNOSIS AND
TREATMENT OF TUMOR

<130> P5026R1-US

<140> US 10/643,795
<141> 2003-08-19

<150> US 60/404,809
<151> 2002-08-19

<150> US 60/405,645
<151> 2002-08-21

<150> US 60/413,192
<151> 2002-09-23

<150> US 60/419,008
<151> 2002-10-15

<150> US 60/426,847
<151> 2002-11-15

<150> US 60/484,959
<151> 2003-07-02

<160> 158

<210> 1
<211> 1870
<212> DNA
<213> Homo sapien

<400> 1
gttactgcac cccaaaacag gtctggccac ggccatgagc atgctgagcc 50

atcatgccca ccgtggatga cattctggag caggttgggg agtctggctg 100

gttccagaag caagccttcc tcatcttatg cctgctgtcg gctgcctttg 150

cgcccatctg tgtgggcatc gtcttcctgg gtttcacacc tgaccaccac 200

tgccagagtc ctggggtggc tgagctgagc cagcgctgtg gctggagccc 250

tgcggaggag ctgaactata cagtgccagg cctggggccc gcgggcgagg 300

1

```
ccttccttgg ccagtgcagg cgctatgaag tggactggaa ccagagcgcc 350

ctcagctgtg tagaccccct ggctagcctg gccaccaaca ggagccacct 400

gccgctgggt ccctgccagg atggctgggt gtatgacacg cccggctctt 450

ccatcgtcac tgagttcaac ctggtgtgtg ctgactcctg gaagctggac 500

ctctttcagt cctgtttgaa tgcgggcttc ttgtttggct ctctcggtgt 550

tggctacttt gcagacaggt ttggccgtaa gctgtgtctc ctgggaactg 600

tgctggtcaa cgcggtgtcg ggcgtgctca tggccttctc gcccaactac 650

atgtccatgc tgctcttccg cctgctgcag ggcctggtca gcaagggcaa 700

ctggatggct ggctacaccc taatcacaga atttgttggc tcgggctcca 750

gaagaacggt ggcgatcatg taccagatgg ccttcacggt ggggctggtg 800

gcgcttaccg ggctggccta cgccctgcct cactggcgct ggctgcagct 850

ggcagtctcc ctgcccacct tcctcttcct gctctactac tggtgtgtgc 900

cggagtcccc tcggtggctg ttatcacaaa aaagaaacac tgaagcaata 950

aagataatgg accacatcgc tcaaaagaat gggaagttgc ctcctgctga 1000

tttaaagatg ctttccctcg aagaggatgt caccgaaaag ctgagccctt 1050

catttgcaga cctgttccgc acgccgcgcc tgaggaagcg caccttcatc 1100

ctgatgtacc tgtggttcac ggactctgtg ctctatcagg ggctcatcct 1150

gcacatgggc gccaccagcg ggaacctcta cctggatttc ctttactccg 1200

ctctggtcga aatcccgggg gccttcatag ccctcatcac cattgaccgc 1250

gtgggccgca tctaccccat ggccatgtca aatttgttgg cggggggcagc 1300

ctgcctcgtc atgattttta tctcacctga cctgcactgg ttaaacatca 1350

taatcatgtg tgttggccga atgggaatca ccattgcaat acaaatgatc 1400

tgcctggtga atgctgagct gtaccccaca ttcgtcagga acctcggagt 1450

gatggtgtgt tcctccctgt gtgacatagg tgggataatc accccccttca 1500

tagtcttcag gctgagggag gtctggcaag ccttgcccct cattttgttt 1550

gcggtgttgg gcctgcttgc cgcgggagtg acgctacttc ttccagagac 1600

caagggggtc gctttgccag agaccatgaa ggacgccgag aaccttggga 1650

gaaaagcaaa gcccaaagaa aacacgattt accttaaggt ccaaacctca 1700

gaaccctcgg gcacctgaga gagatgtttt gcggcgatgt cgtgttggag 1750
```

2

ggatgaagat ggagttatcc tctgcagaaa ttcctagacg ccttcacttc 1800

tctgtattct tcctcatact tgcctacccc caaattaata tcagtcctaa 1850

agaaaaaaaa aaaaaaaaaa 1870

<210> 2
<211> 731
<212> DNA
<213> Homo sapien

<220>
<221> Unsure
<222> 570, 575, 607, 611, 642, 672, 678
<223> Unknown base

<400> 2
aattagcata acccttcctc aggaagagtg agattttata tttgacaata 50

aagtgttaga ctccatttct aaataccaga cttcaaaaga taaggttcaa 100

aagtgttata agaagatatt cctttttttg tcctagagaa cttattttcc 150

tgtgaaaatg cctaccacaa agaagacatt gatgttctta tcaagctttt 200

tcaccagcct tgggtccttc attgtaattt tgctctattc ttgggacaca 250

agcatggatc accagtacaa ttgctgttag agactctgct tcaaatggga 300

gcattttcat cacttacgga ctttttcgtg gggagagtag tgaagaattg 350

agtcacggac ttgcagaacc aaagaaaaag tttgcagttt tagagatact 400

gaataattct tcccaaaaaa ctctgcattc ggtgactatc ctgttcctgg 450

tcctgagttt gatcacgtcg ctgctgagct ctgggtttac cttctacaaa 500

cagcatcagc aacccttacc agacattcct ggggcccgac ggggggtgtac 550

acctgggaac gggcttcggn gcatncttcg tttttggtga ccatgatact 600

ggtttgnggg naacacgcag gtcccaccca actcttccga anaagttgtt 650

tccaaaatgc tttacccccg gnaaccancc agtaaaggaa cgaccccaca 700

ggtaccggat actcgtgctg gctcatactg g 731

<210> 3
<211> 2974
<212> DNA
<213> Homo sapien

<400> 3
gatcagtgtg tgagggaact gccatcatga ggtctgacaa gtcagctttg 50

gtatttctgc tcctgcagct cttctgtgtt ggctgtggat tctgtgggaa 100

agtcctggtg tggccctgtg acatgagcca ttggcttaat gtcaaggtca 150

3

```
ttctagaaga gctcatagtg agaggccatg aggtaacagt attgactcac 200

tcaaagcctt cgttaattga ctacaggaag ccttctgcat tgaaatttga 250

ggtggtccat atgccacagg acagaacaga agaaaatgaa atatttgttg 300

acctagctct gaatgtcttg ccaggcttat caacctggca atcagttata 350

aaattaaatg attttttttgt tgaaataaga ggaactttaa aaatgatgtg 400

tgagagcttt atctacaatc agacgcttat gaagaagcta caggaaacca 450

actacgatgt aatgcttata gaccctgtga ttccctgtgg agacctgatg 500

gctgagttgc ttgcagtccc ttttgtgctc acacttagaa tttctgtagg 550

aggcaatatg gagcgaagct gtgggaaact tccagctcca ctttcctatg 600

tacctgtgcc tatgacagga ctaacagaca gaatgacctt tctggaaaga 650

gtaaaaaatt caatgctttc agttttgttc cacttctgga ttcaggatta 700

cgactatcat ttttgggaag agtttttatag taaggcatta ggaaggccca 750

ctacattatg tgagactgtg ggaaaagctg agatatggct aatacgaaca 800

tattgggatt ttgaatttcc tcaaccatac caacctaact ttgagtttgt 850

tggaggattg cactgtaaac ctgccaaagc tttgcctaag gaaatggaaa 900

attttgtcca gagttcaggg gaagatggta ttgtggtgtt ttctctgggg 950

tcactgtttc aaaatgttac agaagaaaag gctaatatca ttgcttcagc 1000

ccttgcccag atcccacaga aggtgttatg gaggtacaaa ggaaaaaaac 1050

catccacatt aggagccaat actcggctgt atgattggat accccagaat 1100

gatcttcttg gtcatcccaa aaccaaagct tttatcactc atggtggaat 1150

gaatgggatc tatgaagcta tttaccatgg ggtccctatg gtgggagttc 1200

ccatatttgg tgatcagctt gataacatag ctcacatgaa ggccaaagga 1250

gcagctgtag aaataaactt caaaactatg acaagcgaag atttactgag 1300

ggctttgaga acagtcatta ccgattcctc ttataaagag aatgctatga 1350

gattatcaag aattcaccat gatcaacctg taaagcccct agatcgagca 1400

gtcttctgga tcgagtttgt catgcgccac aaaggagcca agcacctgcg 1450

atcagctgcc catgacctca cctggttcca gcactactct atagatgtga 1500

ttgggttcct gctgacctgt gtggcaactg ctatattctt gttcacaaaa 1550

tgttttttat tttcctgtca aaaatttaat aaaactagaa agatagaaaa 1600
```

4

```
gagggaatag atctttccaa attcaagaaa gacctgatgg ggtaatcctg 1650

ttaattccag ccacatagaa tttggtgaaa accttgctat tttcatatta 1700

tctattctgt tattttatct tagctatata gcctagaatt ccatgatcat 1750

gaggttgtga gtatatctca ttctttcgtt gtattttcct aggtgtcttt 1800

actctcttct ctcactttgt gacacaagga catgaataca tctaaatttt 1850

cctatttctg atatgactgt tttgatgatg tcattacttc tataacctta 1900

agtgataggg tgacatgcaa tatgattatt cctggtgtgc gcccaaacac 1950

atggatataa agaggtaaaa aacttaaaat tcacaaaatt cagtaaacca 2000

cacaaatcag gtaagtgttc tatgagatta gctggctatg agaaacataa 2050

tgatgtttct ttttcaattt aaataagcct ttctacatag ccagcatcag 2100

tgatctcaga aaataaattg ctaataatga tgacatggca ttatgcttag 2150

aaaagtttgc tgtatttcca tagacctcat ctagatgtca tggcctacat 2200

ttctgccatc actcaaccaa tactttttc tgttttcttg atgataaaaa 2250

gacctttctc atgattgcca tcaaataaca aaagaaacta ttttttttct 2300

cacatagaga acatgtcagt aagatattca aggtgaacag atatttttgg 2350

gattagtaac tatttgaaat atgtggtgat aattactgag tttataaaat 2400

ttatttgata gtacacttaa agaagattta tatgtttatt ctttaaaaat 2450

gatgaatact cataattctt atctctataa tcaaaagtat aatttactgt 2500

agaaaaataa agagatgctt gttctgaaag taagatcagt gaactgcttt 2550

tcagtctcaa tctttgagaa ttgtaaattc atcaaataat tgcttacata 2600

gtaaaaattt aaggtattag aaaacctgca taacaaatag tattatatat 2650

taaatatttt gatatgtaaa gctctacaca aagctaaata tagtgtaata 2700

atgtttacac tagtaagcaa atatgttaat cttctcattt ttttactgtc 2750

atataatctt agtgatatgc ctattaatag ttttaaataa ataaattggc 2800

ttatctggct ttttgaaaat tttgaaattc ttacagatgt tgattaggta 2850

tatctacaaa ttaatttcaa ttttaaaatg atgatataaa aataaatata 2900

agtattttc ttgtgtatgt atacaataaa tataaataaa attgtttact 2950

gttttgaaag tttcttaagt ttta 2974
```

<210> 4
<211> 2459

5

<400> 4

```
gaggatgctg ctggggaaga tgtgcgcgcc gaggtacccg tccggggggcg 50

cctgggaccc tcacccaggc caggcttcgg ggagagcatg tatctgctct 100

cggacaaggc cacctcgccg ctctcgctgg atgctggcct cgggcaggcc 150

ccctggagcg acctgcttct ttgggcactg ttgctgaaca gggcacagat 200

ggccatgtac ttctgggaga tgggttccaa tgcagtttcc tcagctcttg 250

gggcctgttt gctgctccgg gtgatggcac gcctggagcc tgacgctgag 300

gaggcagcac ggaggaaaga cctggcgttc aagtttgagg ggatgggcgt 350

tgacctcttt ggcgagtgct atcgcagcag tgaggtgagg gctgcccgcc 400

tcctcctccg tcgctgcccg ctctggggggg gatgccactt gcctccagct 450

ggccatgcaa gctgacgccc gtgccttctt tgcccaggat ggggtacagt 500

ctctgctgac acagaagtgg tggggagata tggccagcac tacacccatc 550

tgggccctgg ttctcgcctt cttttgccct ccactcatct acacccgcct 600

catcaccttc aggaaatcag aagaggagcc cacacgggag gagctagagt 650

ttgacatgga tagtgtcatt aatggggaag ggcctgtcgg gacggcggac 700

ccagccgaga agacgccgct gggggtcccg cgccagtcgg gccgtccggg 750

ttgctgcggg ggccgctgcg gggggcgccg gtgcctacgc cgctggttcc 800

acttctgggg cgcgccggtg accatcttca tgggcaacgt ggtcagctac 850

ctgctgttcc tgctgctttt ctcgcgggtg ctgctcgtgg atttccagcc 900

ggcgccgccc ggctccctgg agctgctgct ctatttctgg gctttcacgc 950

tgctgtgcga ggaactgcgc cagggcctga gcggaggcgg gggcagcctc 1000

gccagcgggg gccccgggcc tggccatgcc tcactgagcc agcgcctgcg 1050

cctctacctc gccgacagct ggaaccagtg cgacctagtg gctctcacct 1100

gcttcctcct gggcgtgggc tgccggctga ccccgggttt gtaccacctg 1150

ggccgcactg tcctctgcat cgacttcatg gttttcacgg tgcggctgct 1200

tcacatcttc acggtcaaca aacagctggg gcccaagatc gtcatcgtga 1250

gcaagatgat gaaggacgtg ttcttcttcc tcttcttcct cggcgtgtgg 1300

ctggtagcct atggcgtggc cacggagggg ctcctgaggc cacgggacag 1350
```

```
tgacttccca agtatcctgc gccgcgtctt ctaccgtccc tacctgcaga 1400

tcttcgggca gattccccag gaggacatgg acgtggccct catggagcac 1450

agcaactgct cgtcggagcc cggcttctgg gcacaccctc ctggggccca 1500

ggcgggcacc tgcgtctccc agtatgccaa ctggctggtg gtgctgctcc 1550

tcgtcatctt cctgctcgtg gccaacatcc tgctggtcaa cttgctcatt 1600

gccatgttca gttacacatt cggcaaagta cagggcaaca gcgatctcta 1650

ctggaaggcg caggttaccg cctcatccgg gaattccact ctcggcccgc 1700

gctggccccg cccttatcg tcatctccca cttgcgcctc ctgctcaggc 1750

aattgtgcag gcgaccccgg agcccccagc cgtcctcccc ggccctcgag 1800

catttccggg tttacctttc taaggaagcc gagcggaagt gctaacgtgg 1850

gaatcggtgc ataaggagaa ctttctgctg gcacgcgcta gggacaagcg 1900

ggagagcgac tccgagcgtc tgaagcgcac gtcccagaag gtggacttgg 1950

cactgaaaca gctgggacac atccgcgagt acgaacagcg cctgaaagtg 2000

ctggagcggg aggtccagca gtgtagccgc gtcctggggt gggtggccga 2050

ggccctgagc cgctctgcct tgctgccccc aggtgggccg ccacccctg 2100

acctgcctgg gtccaaagac tgagccctgc tggcggactt caaggagaag 2150

cccccacagg ggattttgct cctagagtaa ggctcatctg ggcctcggcc 2200

cccgcacctg gtggccttgt ccttgaggtg agccccatgt ccatctgggc 2250

cactgtcagg accacctttg ggagtgtcat ccttacaaac cacagcatgc 2300

ccggctcctc ccagaaccag tcccagcctg ggaggatcaa ggcctggatc 2350

ccgggccgtt atccatctgg aggctgcagg gtccttgggg taacagggac 2400

cacagacccc tcaccactca cagattcctc acactgggga aataaagcca 2450

tttcagagg 2459
```

<210> 5
<211> 1450
<212> DNA
<213> Homo sapien

<220>
<221> Unsure
<222> 2
<223> Unknown base

<400> 5
```
tncccgcaga accaggaaag taacggctac agacagtgag aaatagtttc 50
```

```
gctcgccggc tagaaaaact ctgtcggtac caaccccaga gcgttgagag 100

cagcccacct ccacgcttcc ttaacggaga ggtgcaggac tcagacttca 150

ccagcccact cggtcccagc cttgtacgca aagagacgcc aaggacgcgc 200

tctcccgcgt ccaggcagcc ccagcttgct ggcttgcctg cccgcctgcg 250

tgcagcactc ggccggcgtg cagcatgacc ctgtggaacg gcgtactgcc 300

tttttacccc cagccccggc atgccgcagg cttcagcgtt ccactgctca 350

tcgttattct agtgtttttg gctctagcag caagcttcct gctcatcttg 400

ccggggatcc gtggccactc gcgctggttt tggttggtga gagttcttct 450

cagtctgttc ataggcgcag aaattgtggc tgtgcacttc agtgcagaat 500

ggttcgtggg tacagtgaac accaacacat cctacaaagc cttcagcgca 550

gcgcgcgtta cagcccgtgt cggtctgctc gtgggcctgg agggcattaa 600

tattacactc acagggaccc cagtgcatca gctgaacgag accattgact 650

acaacgagca gttcacctgg cgtctgaaag agaattacgc cgcggagtac 700

gcgaacgcac tggagaaggg gctgccggac ccagtgctct acctggcgga 750

gaagttcaca ccgagtagcc cttgcggcct gtaccaccag taccacctgg 800

cgggacacta cgcctcggcc acgctatggg tggcgttctg cttctggctc 850

ctctccaacg tgctgctctc cacgccggcc ccgctctacg gaggcctggc 900

actgctgacc accggagcct tcgcgctctt cggggtcttc gccttggcct 950

ccatctctag cgtgccgctc tgcccgctcc gcctaggctc ctccgcgctc 1000

accactcagt acggcgccgc cttctgggtc acgctggcaa ccggcgtcct 1050

gtgcctcttc ctcggagggg ccgtggtgag tctccagtat gttcggccca 1100

gcgctcttcg caccccttctg gaccaaagcg ccaaggactg cagccaggag 1150

agagggggct cacctcttat cctcggcgac ccactgcaca agcaggccgc 1200

tctcccagac ttaaaatgta tcaccactaa cctgtgaggg ggacccaatc 1250

tggactcctt ccccgccttg ggacatcgca ggccgggaag cagtgcccgc 1300

caggcctggg ccaggagagc tccaggaagg gcactgagcg ctgctggcgc 1350

gaggcctcgg acatccgcag gcaccaggga aagtctcctg gggcgatctg 1400

taaataaacc ttttttttctt ttgttttttta aaaaaaaata aaagtcgacc 1450
```
<210> 6
<211> 2877
```

8
```

<212> DNA
<213> Homo sapien

<400> 6
ctgcaggctt caggaggggga cacaagcatg gagcggcttt ggggtctatt 50

ccagagagcg caacaactgt ccccaagatc ctctcagacc gtctaccagc 100

gtgtggaagg cccccggaaa gggcacctgg aggaggaaga ggaagacggg 150

gaggaggggg cggagacatt ggcccacttc tgccccatgg agctgagggg 200

ccctgagccc ctgggctcta gacccaggca gccaaacctc attccctggg 250

cggcagcagg acggagggct gccccctacc tggtcctgac ggccctgctg 300

atcttcactg gggccttcct actgggctac gtcgccttcc gagggtcctg 350

ccaggcgtgc ggagactctg tgttggtggt cagtgaggat gtcaactatg 400

agcctgacct ggatttccac cagggcagac tctactggag cgacctccag 450

gccatgttcc tgcagttcct gggggagggg cgcctggagg acaccatcag 500

gcaaaccagc cttcgggaac gggtggcagg ctcggccggg atggccgctc 550

tgactcagga cattcgcgcg gcgctctccc gccagaagct ggaccacgtg 600

tggaccgaca cgcactacgt ggggctgcaa ttcccggatc cggctcaccc 650

caacaccctg cactgggtcg atgaggccgg gaaggtcgga gagcagctgc 700

cgctggagga ccctgacgtc tactgcccct acagcgccat cggcaacgtc 750

acgggagagc tggtgtacgc ccactacggg cggcccgaag acctgcagga 800

cctgcgggcc aggggcgtgg atccagtggg ccgcctgctg ctggtgcgcg 850

tggggggtgat cagcttcgcc cagaaggtga ccaatgctca ggacttcggg 900

gctcaaggag tgctcatata cccagagcca gcggacttct cccaggaccc 950

acccaagcca agcctgtcca gccagcaggc agtgtatgga catgtgcacc 1000

tgggaactgg agaccccctac acacctggct tcccttcctt caatcaaacc 1050

cagttccctc cagttgcatc atcaggcctt cccagcatcc cagcccagcc 1100

catcagtgca gacattgcct cccgcctgct gaggaagctc aaaggccctg 1150

tggccccca agaatggcag gggagcctcc taggctcccc ttatcacctg 1200

ggccccgggc cacgactgcg gctagtggtc aacaatcaca ggacctccac 1250

ccccatcaac aacatcttcg gctgcatcga aggccgctca gagccagatc 1300

actacgttgt catcggggcc cagagggatg catggggccc aggagcagct 1350

9

```
aaatccgctg  tggggacggc  tatactcctg  gagctggtgc  ggacctttc  1400

ctccatggtg  agcaacggct  tccggccccg  cagaagtctc  ctcttcatca  1450

gctgggacgg  tggtgacttt  ggaagcgtgg  gctccacgga  gtggctagaa  1500

ggctacctca  gcgtgctgca  cctcaaagcc  gtagtgtacg  tgagcctgga  1550

caacgcagtg  ctgggggatg  acaagtttca  tgccaagacc  agccccttc   1600

tgacaagtct  cattgagagt  gtcctgaagc  aggtggattc  tcccaaccac  1650

agtgggcaga  ctctctatga  acaggtggtg  ttcaccaatc  ccagctggga  1700

tgctgaggtg  atccggcccc  tacccatgga  cagcagtgcc  tattccttca  1750

cggcctttgt  gggagtccct  gccgtcgagt  tctcctttat  ggaggacgac  1800

caggcctacc  cattcctgca  cacaaaggag  gacacttatg  agaacctgca  1850

taaggtgctg  caaggccgcc  tgcccgccgt  ggcccaggcc  gtggcccagc  1900

tcgcagggca  gctcctcatc  cggctcagcc  acgatcgcct  gctgcccctc  1950

gacttcggcc  gctacgggga  cgtcgtcctc  aggcacatcg  gaacctcaa   2000

cgagttctct  ggggacctca  aggcccgcgg  gctgaccctg  cagtgggtgt  2050

actcggcgcg  gggggactac  atccgggcgg  cggaaaagct  gcggcaggag  2100

atctacagct  cggaggagag  agacgagcga  ctgacacgca  tgtacaacgt  2150

gcgcataatg  cgggtggagt  tctacttcct  ttcccagtac  gtgtcgccag  2200

ccgactcccc  gttccgccac  atcttcatgg  gccgtggaga  ccacacgctg  2250

ggcgccctgc  tggaccacct  gcggctgctg  cgctccaaca  gctccgggac  2300

ccccggggcc  acctcctcca  ctggcttcca  ggagagccgt  ttccggcgtc  2350

agctagccct  gctcacctgg  acgctgcaag  gggcagccaa  tgcgcttagc  2400

ggggatgtct  ggaacattga  taacaacttc  tgaggccctg  gggatcctca  2450

catccccgtc  ccccagtcaa  gagctcctct  gctcctcgct  tgaatgattc  2500

agggtcaggg  aggtggctca  gagtccacct  ctcattgctg  atcaatttct  2550

cattacccct  acacatctct  ccacggagcc  cagaccccag  cacagatatc  2600

cacacacccc  agccctgcag  tgtagctgac  cctaatgtga  cggtcatact  2650

gtcggttaat  cagagagtag  catcccttca  atcacagccc  cttccccttt  2700

ctggggtcct  ccatacctag  agaccactct  gggaggtttg  ctaggccctg  2750

ggacctggcc  agctctgtta  gtgggagaga  tcgctggcac  catagcctta  2800
```

10

```
tggccaacag gtggtctgtg gtgaaagggg cgtggagttt caatatcaat 2850

aaaccacctg atatcaataa gccaaaa 2877
```

<210> 7
<211> 1926
<212> DNA
<213> Homo sapien

<400> 7
```
gctggagcat cccgctctgg tgccgctgca gccggcagag atggttgagc 50

tcatgttccc gctgttgctc ctccttctgc ccttccttct gtatatggct 100

gcgccccaaa tcaggaaaat gctgtccagt ggggtgtgta catcaactgt 150

tcagcttcct gggaaagtag ttgtggtcac aggagctaat acaggtatcg 200

ggaaggagac agccaaagag ctggctcaga gaggagctcg agtatattta 250

gcttgccggg atgtggaaaa gggggaattg gtggccaaag agatccagac 300

cacgacaggg aaccagcagg tgttggtgcg gaaactggac ctgtctgata 350

ctaagtctat tcgagctttt gctaagggct tcttagctga ggaaaagcac 400

ctccacgttt tgatcaacaa tgcaggagtg atgatgtgtc cgtactcgaa 450

gacagcagat ggctttgaga tgcacatagg agtcaaccac ttgggtcact 500

tcctcctaac ccatctgctg ctagagaaac taaaggaatc agccccatca 550

aggatagtaa atgtgtcttc cctcgcacat cacctgggaa ggatccactt 600

ccataacctg cagggcgaga aattctacaa tgcaggcctg gcctactgtc 650

acagcaagct agccaacatc ctcttcaccc aggaactggc ccggagacta 700

aaaggctctg gcgttacgac gtattctgta caccctggca cagtccaatc 750

tgaactggtt cggcactcat ctttcatgag atggatgtgg tggcttttct 800

ccttttttcat caagactcct cagcagggag cccagaccag cctgcactgt 850

gccttaacag aaggtcttga gattctaagt gggaatcatt tcagtgactg 900

tcatgtggca tgggtctctg cccaagctcg taatgagact atagcaaggc 950

ggctgtggga cgtcagttgt gacctgctgg gcctcccaat agactaacag 1000

gcagtgcagt tggacccaag agaagactgc agcagactac acagtacttc 1050

ttgtcaaaat gattctcctt caaggttttc aaaacctttna gcacaaagag 1100

agcaaaacct tccagccttg cctgcttggt gtccagttaa aactcagtgt 1150

actgccagat tcgtctaaat gtctgtcatg tccagattta ctttgcttct 1200
```

11

```
gttactgcca gagttactag agatatcata ataggataag aagaccctca 1250

tatgacctgc acagctcatt ttccttctga aagaaactac tacctaggag 1300

aatctaagct atagcaggga tgatttatgc aaatttgaac tagcttcttt 1350

gttcacaatt cagttcctcc caaccaacca gtcttcactt caagagggcc 1400

acactgcaac ctcagcttaa catgaataac aaagactggc tcaggagcag 1450

ggcttgccca ggcatggtgg atcaccggag tcagtagttc aagaccagcc 1500

tggccaacat ggtgaaaccc cacctctact aaaaattgtg tatatctttg 1550

tgtgtcttcc tgtttatgtg tgccaaggga gtattttcac aaagttcaaa 1600

acagccacaa taatcagaga tggagcaaac cagtgccatc cagtctttat 1650

gcaaatgaaa tgctgcaaag ggaagcagat tctgtatatg ttggtaacta 1700

cccaccaaga gcacatgggt agcagggaag aagtaaaaaa agagaaggag 1750

aatactggaa gataatgcac aaaatgaagg gactagttaa ggattaacta 1800

gccctttaag gattaactag ttaaggatta atagcaaaag acattaaata 1850

tgctaacata gctatggagg aattgagggc aagcacccag gactgatgag 1900

gtcttaacaa aaaccagtgt ggcaaa 1926
```

<210> 8
<211> 1126
<212> DNA
<213> Homo sapien

<400> 8
```
gctcggccag gctgctggta cctgcgtccg cccggcgagc aggacaggct 50

gctttggttt gtgacctcca ggcaggacgg ccatcctctc cagaatgaag 100

atcttcttgc cagtgctgct ggctgccctt ctgggtgtgg agcgagccag 150

ctcgctgatg tgcttctcct gcttgaacca gaagagcaat ctgtactgcc 200

tgaagccgac catctgctcc gaccaggaca actactgcgt gactgtgtct 250

gctagtgccg gcattgggaa tctcgtgaca tttggccaca gcctgagcaa 300

gacctgttcc ccggcctgcc ccatcccaga aggcgtcaat gttggtgtgg 350

cttccatggg catcagctgc tgccagagct ttctgtgcaa tttcagtgcg 400

gccgatggcg ggctgcgggc aagcgtcacc ctgctgggtg ccgggctgct 450

gctgagcctg ctgccggccc tgctgcggtt tggcccctga ccgcccagac 500

cctgtccccc gatcccccag ctcaggaagg aaagcccagc cctttctgga 550
```

```
tcccacagtg tatgggagcc cctgactcct cacgtgcctg atctgtgccc 600

ttggtcccag gtcaggccca ccccctgcac ctccacctgc cccagccct 650

gcctctgccc caagtggggc cagctgccct cacttctggg gtggatgatg 700

tgaccttcct tgggggactg cggaagggac gagggttccc tggagtctta 750

cggtccaaca tcaggaccaa gtcccatgga catgctgaca gggtccccag 800

ggagaccgtg tcagtaggga tgtgtgcctg gctgtgtacg tgggtgtgca 850

gtgcacgtga gagcacgtgg cggcttctgg gggccatgtt tggggaggga 900

ggtgtgccag cagcctggag agcctcagtc cctgtagccc cctgccctgg 950

cacagctgca tgcacttcaa gggcagcctt tgggggttgg ggtttctgcc 1000

acttccgggt ctaggccctg ccccaaatcc agccagtcct gccccagccc 1050

accccacat tggagccctc ctgctgcttt ggtgcctcaa ataaatacag 1100

atgtccccca aaaaaaaaaa aaaaaa 1126
```

<210> 9
<211> 1282
<212> DNA
<213> Homo sapien

<220>
<221> Unsure
<222> 898, 1187, 1198, 1241, 1262, 1266, 1277, 1281
<223> Unknown base

<400> 9
```
gaagtttctc actagggtct tctctggccc agcctttgac tgaagctggt 50

ctggagacag gggcattaga gaagtgactc atagatggcc taaagaagcg 100

gggccactca aggacccagg acagagggaa gagggccaac ccagctggac 150

cacaggcaaa ccccattgcc tttgagagaa agaagaggac ccggtgaaac 200

atgctgctgc tgaagaaaca cacggaggac atcagcagcg tctacgagat 250

ccgcgagagg ctcggctcgg gtgccttctc cgaggtggtg ctggcccagg 300

agcggggctc cgcacacctc gtggccctca agtgcatccc caagaaggcc 350

ctccggggca aggaggccct ggtggagaac gagatcgcag tgctccgtag 400

gatcagtcac cccaacatcg tcgctctgga ggatgtccac gagagccctt 450

cccacctcta cctggccatg gaactggtga cgggtggcga gctgtttgac 500

cgcatcatgg agcgcggctc ctacacagag aaggatgcca gccatctggt 550

gggtcaggtc cttggcgccg tctcctacct gcacagcctg gggatcgtgc 600
```

accgggacct caagcccgaa aacctcctgt atgccacgcc ctttgaggac 650

tcgaagatca tggtctctga ctttggactc tccaaaatcc aggctgggaa 700

catgctaggc accgcctgtg ggacccctgg atatgtggcc ccagagctct 750

tggagcagaa accctacggg aaggccgtag atgtgtgggc cctgggcgtc 800

atctcctaca tcctgctgtg tgggtacccc cccttctacg acgagagcga 850

ccctgagctc ttcagccaga tcctgagggc cagctatgag tttgactntc 900

ctttctggga tgacatctca gaatcaggca aagactttat tcggcacctt 950

ctggagcgag accttcagaa gaggttcacc tgccaacagg ccttgcggga 1000

cctttggatc ttttgggaca caggctttgg cagggacatc ttagggtttg 1050

tcagtgagca gatccggaag aactttgctt ggacacactg gaagcgagcc 1100

ttcaatgcca ccttgttcct gcgccacatc cggaagctgg ggcagatccc 1150

agagggcgag ggggcctctg agcagggcat ggsccgncac agccactnag 1200

gccttcgtgc tggccagccc cccaagtggt gatgcccagg nagatgccga 1250

ggccaagtgg antgancccc agatttnctt nc 1282

<210> 10
<211> 3475
<212> DNA
<213> Homo sapien

<400> 10
ggaacgagtg ggaacgtagc tggtcgcaga gggcaccagc ggctgcagga 50

cttcaccaag ggaccctgag gctcgtgagc agggacccgc ggtgcgggtt 100

atgctggggg ctcagatcac cgtagacaac tggacactca ggaccacgcc 150

atggaggagc tgcaggatga ttatgaagac atgatggagg agaatctgga 200

gcaggaggaa tatgaagacc cagacatccc cgagtcccag atggaggagc 250

cggcagctca cgacaccgag gcaacagcca cagactacca caccacatca 300

cacccgggta cccacgaggt ctatgtggag ctgcaggagc tggtgatgga 350

cgaaaagaac caggagctga gatggatgga ggcggcgcgc tgggtgcaac 400

tggaggagaa cctgggggag aatggggcct ggggccgccc gcacctctct 450

cacctcacct tctggagcct cctagagctg cgtagagtct tcaccaaggg 500

tactgtcctc ctagacctgc aagagacctc cctggctgga gtggccaacc 550

aactgctaga caggtttatc tttgaagacc agatccggcc tcaggaccga 600

```
gaggagctgc tccgggccct gctgcttaaa cacagccacg ctggagagct 650

ggaggccctg gggggtgtga agcctgcagt cctgacacgc tctggggatc 700

cttcacagcc tctgctcccc caacactcct cactggagac acagctcttc 750

tgtgagcagg gagatggggg cacagaaggg cactcaccat ctggaattct 800

ggaaaagatt cccccggatt cagaggccac gttggtgcta gtgggccgcg 850

ccgacttcct ggagcagccg gtgctgggct tcgtgaggct gcaggaggca 900

gcggagctgg aggcggtgga gctgccggtg cctatacgct tcctctttgt 950

gttgctggga cctgaggccc cccacatcga ttacacccag cttggccggg 1000

ctgctgccac cctcatgtca gagagggtgt tccgcataga tgcctacatg 1050

gctcagagcc gaggggagct gctgcactcc ctagagggct tcctggactg 1100

cagcctagtg ctgcctccca ccgatgcccc ctccgagcag gcactgctca 1150

gtctggtgcc tgtgcagagg gagctacttc gaaggcgcta tcagtccagc 1200

cctgccaagc cagactccag cttctacaag ggcctagact taaatggggg 1250

cccagatgac cctctgcagc agacaggcca gctcttcggg ggcctggtgc 1300

gtgatatccg gcgccgctac ccctattacc tgagtgacat cacagatgca 1350

ttcagccccc aggtcctggc tgccgtcatc ttcatctact ttgctgcact 1400

gtcacccgcc atcaccttcg gcggcctcct gggagaaaag acccggaacc 1450

agatgggagt gtcggagctg ctgatctcca ctgcagtgca gggcattctc 1500

ttcgccctgc tggggctca gcccctgctt gtggtcggct tctcaggacc 1550

cctgctggtg tttgaggaag ccttcttctc gttctgcgag accaacggtc 1600

tagagtacat cgtgggccgc gtgtggatcg gcttctggct catcctgctg 1650

gtggtgttgg tggtggcctt cgagggtagc ttcctggtcc gcttcatctc 1700

ccgctatacc caggagatct tctccttcct catttccctc atcttcatct 1750

atgagacttt ctccaagctg atcaagatct ccaggacca cccactacag 1800

aagacttata actacaacgt gttgatggtg cccaaacctc agggcccct 1850

gcccaacaca gccctcctct cccttgtgct catggccggt accttcttct 1900

ttgccatgat gctgcgcaag ttcaagaaca gctcctattt ccctggcaag 1950

ctgcgtcggg tcatcgggga cttcggggtc cccatctcca tcctgatcat 2000

ggtcctggtg gatttcttca ttcaggatac ctacacccag aaactctcgg 2050
```

```
tgcctgatgg cttcaaggtg tccaactcct cagcccgggg ctgggtcatc 2100

cacccactgg gcttgcgttc cgagtttccc atctggatga tgtttgcctc 2150

cgccctgcct gctctgctgg tcttcatcct catattcctg gagtctcaga 2200

tcaccacgct gattgtcagc aaacctgagc gcaagatggt caagggctcc 2250

ggcttccacc tggacctgct gctggtagta ggcatgggtg gggtggccgc 2300

cctctttggg atgccctggc tcagtgccac caccgtgcgt tccgtcaccc 2350

atgccaacgc cctcactgtc atgggcaaag ccagcacccc aggggctgca 2400

gcccagatcc aggaggtcaa agagcagcgg atcagtggac tcctggtcgc 2450

tgtgcttgtg ggcctgtcca tcctcatgga gcccatcctg tcccgcatcc 2500

ccctggctgt actgtttggc atcttcctct acatgggggt cacgtcgctc 2550

agcggcatcc agctctttga ccgcatcttg cttctgttca agccacccaa 2600

gtatcaccca gatgtgccct acgtcaagcg ggtgaagacc tggcgcatgc 2650

acttattcac gggcatccag atcatctgcc tggcagtgct gtgggtggtg 2700

aagtccacgc cggcctccct ggccctgccc ttcgtcctca tcctcactgt 2750

gccgctgcgg cgcgtcctgc tgccgctcat cttcaggaac gtggagcttc 2800

agtgtctgga tgctgatgat gccaaggcaa cctttgatga ggaggaaggt 2850

cgggatgaat acgacgaagt ggccatgcct gtgtgagggg cgggcccagg 2900

ccctagaccc tcccccacca ttccacatcc ccaccttcca aggaaaagca 2950

gaagttcatg ggcacctcat ggactccagg atcctcctgg agcagcagct 3000

gaggccccag ggctgtgggt ggggaaggaa ggcgtgtcca ggagaccttc 3050

cacaaagggt agcctggctt ttctggctgg ggatggccga tggggcccac 3100

attaggggggt ttgttgcaca gtccctcctg ttgccacact ttcactgggg 3150

atcccgtgct ggaagactta gatctgagcc ctccctcttc ccagcacagg 3200

caggggtaga agcaaaggca ggaggtgggt gagcgggtgg ggtgcttgct 3250

gtgtgacctt gggcaagtcc cttgaccttt ccagcctata tttcctcttc 3300

tgtaaaatgg gtatattgat gataataccc acattacagg atggttactg 3350

aggaccaaag atacatgtaa aatagggctt tgtaaactcc acagggactg 3400

ttctatagca gtcatcattt gtctttgaac gtacccaagg tcacatagct 3450

gggatttgaa ctgagccgtg cagct 3475
```

16

<210> 11
<211> 2290
<212> DNA
<213> Homo sapien

<220>
<221> Unsure
<222> 11, 30, 39, 45
<223> Unknown base

<400> 11
ctcttttgct nggacttcac tgtcactcan gaaaaagcng tgaanctaaa 50

acagaagaat cttagcactg agataaggga gaacctgtca gagctccgtc 100

aggagaattc caagttgacg ttcaatcagc tgctgacccg cttctctgcc 150

tacatggtag cctgggttgt ctctacagga gtggccatag cctgctgtgc 200

agccgtttat tacctggctg agtacaactt agagttcctg aagacacaca 250

gtaaccctgg ggcggtgctg ttactgcctt tcgttgtgtc ctgcattaat 300

ctggccgtgc catgcatcta ctccatgttc aggcttgtgg agaggtacga 350

gatgccacgg cacgaagtct acgttctcct gatccgaaac atcttttga 400

aaatatcaat cattggcatt ctttgttact attggctcaa caccgtggcc 450

ctgtctggtg aagagtgttg ggaaaccctc attggccagg acatctaccg 500

gctccttctg atggattttg tgttctcttt agtcaattcc ttcctggggg 550

agtttctgag gagaatcatt gggatgcaac tgatcacaag tcttggcctt 600

caggagtttg acattgccag gaacgttcta gaactgatct atgcacaaac 650

tctggtgtgg attggcatct tcttctgccc cctgctgccc tttatccaaa 700

tgattatgct tttcatcatg ttctactcca aaaatatcag cctgatgatg 750

aatttccagc ctccgagcaa agcctggcgg gcctcacaga tgatgacttt 800

cttcatcttc ttgctctttt tcccatcctt caccggggtc ttgtgcaccc 850

tggccatcac catctggaga ttgaagcctt cagctgactg tggccctttt 900

cgaggtctgc ctctcttcat tcactccatc tacagctgga tcgacaccct 950

aagtacacgg cctggctacc tgtgggttgt ttggatctat cggaacctca 1000

ttggaagtgt gcacttcttt ttcatcctca ccctcattgt gctaatcatc 1050

acctatcttt actggcagat cacagaggga aggaagatta tgataaggct 1100

gctccatgag cagatcatta atgagggcaa agataaaatg ttcctgatag 1150

aaaaattgat caagctgcag gatatggaga agaaagcaaa ccccagctca 1200

cttgttctgg aaaggagaga ggtggagcaa caaggctttt tgcatttggg 1250

ggaacatgat ggcagtcttg acttgcgatc tagaagatca gttcaagaag 1300

gtaatccaag ggcctgatga ctcttttggt aaccagacac caatcaaata 1350

aggggaggag atgaaaatgg aatgatttct tccatgccac ctgtgccttt 1400

aggaactgcc cagaagaaaa tccaaggctt tagccaggag cggaaactga 1450

ctaccatgta attatcaaag taaaattggg cattccatgc tattttttaat 1500

acctggattg ctgatttttc aagacaaaat acttggggtt ttccaataaa 1550

gattgttgta atattgaaat gagcctacaa aaacctagga agagataact 1600

aggaataat gtatattatc ttcaagaaat gtgtgcagga atgattggtt 1650

cttagaaatc tctcctgcca gacttcccag acctggcaaa ggtttagaaa 1700

ctgttgctaa gaaaagtggt ccatcctgaa taaacatgta atactccagc 1750

agggatatga agcctctgaa ttgtagaacc tgcatttatt tgtgactttg 1800

aactaaagac atcccccatg tcccaaaggt ggaatacaac cagaggtctc 1850

atctctgaac tttcttgcgt actgattaca tgagtctttg gagtcgggga 1900

tggaggaggt tctgcccctg tgaggtgtta tacatgacca tcaaagtcct 1950

acgtcaagct agctttgcac agtggcagta ccgtagccaa tgagatttat 2000

ccgagacgcg attattgcta attggaaatt ttcccaatac cccaccgtga 2050

tgacttgaaa tataatcagc gctggcaatt tttgacagtc tctacggaga 2100

ctgaataaga aaaagaaaa gaaaagaaat tagctgggtg cgatggctta 2150

tgcctgtaat cccggcactt tgggaggctg aggcaagcgg atcacttaat 2200

gtcaggagtt caagaccagc ctggccaaca tggtgaaacc ccgtctctac 2250

taaggataaa aaaactggct gggcgtggtg gtacatgcct 2290

<210> 12
<211> 2148
<212> DNA
<213> Homo sapien

<400> 12
 gcttcagggt acagctcccc cgcagccaga agccgggcct gcagcccctc 50

 agcaccgctc cgggacaccc cacccgcttc ccaggcgtga cctgtcaaca 100

 gcaacttcgc ggtgtggtga actctctgag gaaaaaccat tttgattatt 150

 actctcagac gtgcgtggca acaagtgact gagacctaga aatccaagcg 200

```
ttggaggtcc tgaggccagc ctaagtcgct tcaaaatgga acgaaggcgt 250

ttgtggggtt ccattcagag ccgatacatc agcatgagtg tgtggacaag 300

cccacggaga cttgtggagc tggcagggca gagcctgctg aaggatgagg 350

ccctggccat tgccgccctg gagttgctgc ccagggagct cttcccgcca 400

ctcttcatgg cagcctttga cgggagacac agccagaccc tgaaggcaat 450

ggtgcaggcc tggcccttca cctgcctccc tctgggagtg ctgatgaagg 500

gacaacatct tcacctggag accttcaaag ctgtgcttga tggacttgat 550

gtgctccttg cccaggaggt tcgccccagg aggtggaaac ttcaagtgct 600

ggatttacgg aagaactctc atcaggactt ctggactgta tggtctggaa 650

acagggccag tctgtactca tttccagagc cagaagcagc tcagcccatg 700

acaaagaagc gaaaagtaga tggtttgagc acagaggcag agcagccctt 750

cattccagta gaggtgctcg tagacctgtt cctcaaggaa ggtgcctgtg 800

atgaattgtt ctcctacctc attgagaaag tgaagcgaaa gaaaaatgta 850

ctacgcctgt gctgtaagaa gctgaagatt tttgcaatgc ccatgcagga 900

tatcaagatg atcctgaaaa tggtgcagct ggactctatt gaagatttgg 950

aagtgacttg tacctggaag ctacccacct tggcgaaatt ttctccttac 1000

ctgggccaga tgattaatct gcgtagactc ctcctctccc acatccatgc 1050

atcttcctac atttccccgg agaaggaaga gcagtatatc gcccagttca 1100

cctctcagtt cctcagtctg cagtgcctgc aggctctcta tgtggactct 1150

ttattttttcc ttagaggccg cctggatcag ttgctcaggc acgtgatgaa 1200

cccccttggaa accctctcaa taactaactg ccggctttcg gaaggggatg 1250

tgatgcatct gtcccagagt cccagcgtca gtcagctaag tgtcctgagt 1300

ctaagtgggg tcatgctgac cgatgtaagt cccgagcccc tccaagctct 1350

gctggagaga gcctctgcca ccctccagga cctggtcttt gatgagtgtg 1400

ggatcacgga tgatcagctc cttgccctcc tgccttccct gagccactgc 1450

tcccagctta caaccttaag cttctacggg aattccatct ccatatctgc 1500

cttgcagagt ctcctgcagc acctcatcgg gctgagcaat ctgacccacg 1550

tgctgtatcc tgtccccctg gagagttatg aggacatcca tggtaccctc 1600

cacctggaga ggcttgccta tctgcatgcc aggctcaggg agttgctgtg 1650
```

19

```
tgagttgggg cggcccagca tggtctggct tagtgccaac ccctgtcctc 1700

actgtgggga cagaaccttc tatgacccgg agcccatcct gtgcccctgt 1750

ttcatgccta actagctggg tgcacatatc aaatgcttca ttctgcatac 1800

ttggacacta aagccaggat gtgcatgcat cttgaagcaa caaagcagcc 1850

acagtttcag acaaatgttc agtgtgagtg aggaaaacat gttcagtgag 1900

gaaaaaacat tcagacaaat gttcagtgag gaaaaaaagg ggaagttggg 1950

gataggcaga tgttgacttg aggagttaat gtgatctttg gggagataca 2000

tcttatagag ttagaaatag aatctgaatt tctaaaggga gattctggct 2050

tgggaagtac atgtaggagt taatccctgt gtagactgtt gtaaagaaac 2100

tgttgaaaat aaagagaagc aatgtgaagc aaaaaaaaaa aaaaaaa 2148
```

<210> 13
<211> 3604
<212> DNA
<213> Homo sapien

<220>
<221> Unsure
<222> 3505, 3583
<223> Unknown base

<400> 13
```
gggcaggctc agtgtgagtg aactggaggc ttctctacaa catgacccaa 50

aggagcattg caggtcctat ttgcaacctg aagtttgtga ctctcctggt 100

tgccttaagt tcagaactcc cattcctggg agctggagta cagcttcaag 150

acaatgggta taatggattg ctcattgcca ttaatcctca ggtacctgag 200

aatcagaacc tcatctcaaa cattaaggaa atgataactg aagcttcatt 250

ttacctattt aatgctacca agagaagagt atttttcaga aatataaaga 300

ttttaatacc tgccacatgg aaagctaata ataacagcaa aataaaacaa 350

gaatcatatg aaaaggcaaa tgtcatagtg actgactggt atggggcaca 400

tggagatgat ccatacaccc tacaatacag agggtgtgga aaagagggaa 450

aatacattca tttcacacct aatttcctac tgaatgataa cttaacagct 500

ggctacggat cacgaggccg agtgtttgtc catgaatggg cccacctccg 550

ttggggtgtg ttcgatgagt atatcaatga caaacctttc tacataaatg 600

ggcaaaatca aattaaagtg acaaggtgtt catctgacat cacaggcatt 650

tttgtgtgtg aaaaaggtcc ttgcccccaa gaaaactgta ttattagtaa 700
```

```
gctttttaaa gaaggatgca cctttatcta caatagcacc caaaatgcaa 750

ctgcatcaat aatgttcatg caaagtttat cttctgtggt tgaattttgt 800

aatgcaagta cccacaacca agaagcacca aacctacaga accagatgtg 850

cagcctcaga agtgcatggg atgtaatcac agactctgct gactttcacc 900

acagctttcc catgaatggg actgagcttc cacctcctcc cacattctcg 950

cttgtacagg ctggcgacaa agtggtctgt ttagtgctgg atgtgtccag 1000

caagatggca gaggctgaca gactccttca actacaacaa gccgcagaat 1050

tttatttgat gcagattgtt gaaattcata ccttcgtggg cattgccagt 1100

ttcgacagca aaggagagat cagagcccag ctacaccaaa ttaacagcaa 1150

tgatgatcga aagttgctgg tttcatatct gcccaccact gtatcagcta 1200

aaacagacat cagcatttgt tcagggctta agaaaggatt tgaggtggtt 1250

gaaaaactga atggaaaagc ttatggctct gtgatgatat tagtgaccag 1300

cggagatgat aagcttcttg gcaattgctt acccactgtg ctcagcagtg 1350

gttcaacaat tcactccatt gccctgggtt catctgcagc cccaaatctg 1400

gaggaattat cacgtcttac aggaggttta agttctttg ttccagatat 1450

atcaaactcc aatagcatga ttgatgcttt cagtagaatt tcctctggaa 1500

ctggagacat tttccagcaa catattcagc ttgaaagtac aggtgaaaat 1550

gtcaaacctc accatcaatt gaaaaacaca gtgactgtgg ataatactgt 1600

gggcaacgac actatgtttc tagttacgtg gcaggccagt ggtcctcctg 1650

agattatatt atttgatcct gatggacgaa aatactacac aaataatttt 1700

atcaccaatc taacttttcg gacagctagt ctttggattc caggaacagc 1750

taagcctggg cactggactt acaccctgaa caatacccat cattctctgc 1800

aagccctgaa agtgacagtg acctctcgcg cctccaactc agctgtgccc 1850

ccagccactg tggaagcctt tgtggaaaga gacagcctcc attttcctca 1900

tcctgtgatg atttatgcca atgtgaaaca gggatttat cccattctta 1950

atgccactgt cactgccaca gttgagccag agactggaga tcctgttacg 2000

ctgagactcc ttgatgatgg agcaggtgct gatgttataa aaaatgatgg 2050

aatttactcg aggtattttt tctcctttgc tgcaaatggt agatatagct 2100

tgaaagtgca tgtcaatcac tctcccagca taagcacccc agcccactct 2150
```

21

```
attccaggga gtcatgctat gtatgtacca ggttacacag caaacggtaa 2200

tattcagatg aatgctccaa ggaaatcagt aggcagaaat gaggaggagc 2250

gaaagtgggg ctttagccga gtcagctcag gaggctcctt ttcagtgctg 2300

ggagttccag ctggccccca ccctgatgtg tttccaccat gcaaaattat 2350

tgacctggaa gctgtaaaag tagaagagga attgacccta tcttggacag 2400

cacctggaga agactttgat cagggccagg ctacaagcta tgaaataaga 2450

atgagtaaaa gtctacagaa tatccaagat gactttaaca atgctatttt 2500

agtaaataca tcaaagcgaa atcctcagca agctggcatc agggagatat 2550

ttacgttctc accccaaatt tccacgaatg gacctgaaca tcagccaaat 2600

ggagaaacac atgaaagcca cagaatttat gttgcaatac gagcaatgga 2650

taggaactcc ttacagtctg ctgtatctaa cattgcccag gcgcctctgt 2700

ttattccccc caattctgat cctgtacctg ccagagatta tcttatattg 2750

aaaggagttt taacagcaat gggtttgata ggaatcattt gccttattat 2800

agttgtgaca catcatactt taagcaggaa aaagagagca gacaagaaag 2850

agaatggaac aaaattatta taaataaata tccaaagtgt cttccttctt 2900

agatataaga cccatggcct tcgactacaa aaacatacta acaaagtcaa 2950

attaacatca aaactgtatt aaaatgcatt gagtttttgt acaatacaga 3000

taagattttt acatggtaga tcaacaattc tttttggggg tagattagaa 3050

aacccttaca ctttggctat gaacaaataa taaaaattat tctttaaagt 3100

aatgtcttta aaggcaaagg gaagggtaaa gtcggaccag tgtcaaggaa 3150

agtttgtttt attgaggtgg aaaaatagcc ccaagcagag aaaaggaggg 3200

taggtctgca ttataactgt ctgtgtgaag caatcattta gttactttga 3250

ttaatttttc ttttctcctt atctgtgcag tacaggttgc ttgtttacat 3300

gaagatcatg ctatatttta tatatgtagc ccctaatgca aagctcttta 3350

cctcttgcta ttttgttata tatatttcag atgacatctc cctgctaatg 3400

ctcagagatc ttttttcact gtaagaggta acctttaaca atatgggtat 3450

tacctttgtc tcttcatacc ggtttttatga caaaggtcta ttgaatttat 3500

ttgtntgtaa gtttctactc ccatcaaagc agctttctaa gtttattgcc 3550

ttgggttatt atggaatgat agttatagcc ccntataatg ccttacctag 3600
```

22

```
gaaa 3604

<210> 14
<211> 2479
<212> DNA
<213> Homo sapien

<400> 14
gtcatattga acattccaga tacctatcat tactcgatgc tgttgataac 50

agcaagatgg ctttgaactc agggtcacca ccagctattg gaccttacta 100

tgaaaaccat ggataccaac cggaaaaccc ctatcccgca cagcccactg 150

tggtccccac tgtctacgag gtgcatccgg ctcagtacta cccgtccccc 200

gtgccccagt acgccccgag ggtcctgacg caggcttcca accccgtcgt 250

ctgcacgcag cccaaatccc catccgggac agtgtgcacc tcaaagacta 300

agaaagcact gtgcatcacc ttgaccctgg ggaccttcct cgtgggagct 350

gcgctggccg ctggcctact ctggaagttc atgggcagca agtgctccaa 400

ctctgggata gagtgcgact cctcaggtac ctgcatcaac ccctctaact 450

ggtgtgatgg cgtgtcacac tgccccggcg gggaggacga gaatcggtgt 500

gttcgcctct acggaccaaa cttcatcctt cagatgtact catctcagag 550

gaagtcctgg caccctgtgt gccaagacga ctggaacgag aactacgggc 600

gggcggcctg cagggacatg ggctataaga ataattttta ctctagccaa 650

ggaatagtgg atgacagcgg atccaccagc tttatgaaac tgaacacaag 700

tgccggcaat gtcgatatct ataaaaaact gtaccacagt gatgcctgtt 750

cttcaaaagc agtggtttct ttacgctgtt tagcctgcgg ggtcaacttg 800

aactcaagcc gccagagcag gatcgtgggc ggtgagagcg cgctcccggg 850

ggcctggccc tggcaggtca gcctgcacgt ccagaacgtc cacgtgtgcg 900

gaggctccat catcacccc gagtggatcg tgacagccgc ccactgcgtg 950

gaaaaacctc ttaacaatcc atggcattgg acggcatttg cgggattttt 1000

gagacaatct ttcatgttct atggagccgg ataccaagta caaaaagtga 1050

tttctcatcc aaattatgac tccaagacca agaacaatga cattgcgctg 1100

atgaagctgc agaagcctct gactttcaac gacctagtga accagtgtg 1150

tctgcccaac ccaggcatga tgctgcagcc agaacagctc tgctggattt 1200

ccgggtgggg ggccaccgag gagaaaggga agacctcaga agtgctgaac 1250
```

```
gctgccaagg tgcttctcat tgagacacag agatgcaaca gcagatatgt 1300

ctatgacaac ctgatcacac cagccatgat ctgtgccggc ttcctgcagg 1350

ggaacgtcga ttcttgccag ggtgacagtg gagggcctct ggtcacttcg 1400

aacaacaata tctggtggct gataggggat acaagctggg gttctggctg 1450

tgccaaagct tacagaccag gagtgtacgg gaatgtgatg gtattcacgg 1500

actggattta tcgacaaatg aaggcaaacg gctaatccac atggtcttcg 1550

tccttgacgt cgttttacaa gaaaacaatg gggctggttt tgcttccccg 1600

tgcatgattt actcttagag atgattcaga ggtcacttca ttttattaa 1650

acagtgaact tgtctggctt tggcactctc tgccatactg tgcaggctgc 1700

agtggctccc ctgcccagcc tgctctccct aaccccttgt ccgcaagggg 1750

tgatggccgg ctggttgtgg gcactggcgg tcaattgtgg aaggaagagg 1800

gttggaggct gcccccattg agatcttcct gctgagtcct ttccaggggc 1850

caattttgga tgagcatgga gctgtcactt ctcagctgct ggatgacttg 1900

agatgaaaaa ggagagacat ggaaagggag acagccaggt ggcacctgca 1950

gcggctgccc tctggggcca cttggtagtg tccccagcct acttcacaag 2000

gggattttgc tgatgggttc ttagagcctt agcagccctg gatggtggcc 2050

agaaataaag ggaccagccc ttcatgggtg gtgacgtggt agtcacttgt 2100

aaggggaaca gaaacatttt tgttcttatg gggtgagaat atagacagtg 2150

cccttggtgc gagggaagca attgaaaagg aacttgccct gagcactcct 2200

ggtgcaggtc tccacctgca cattgggtgg ggctcctggg agggagactc 2250

agccttcctc ctcatcctcc ctgaccctgc tcctagcacc ctggagagtg 2300

aatgcccctt ggtccctggc agggcgccaa gtttggcacc atgtcggcct 2350

cttcaggcct gatagtcatt ggaaattgag gtccatgggg gaaatcaagg 2400

atgctcagtt taaggtacac tgtttccatg ttatgtttct acacattgat 2450

ggtggtgacc ctgagttcaa agccatctt 2479
```

<210> 15
<211> 969
<212> DNA
<213> Homo sapien

<400> 15
```
 ggatttccgg gctccatggc aagatccctt ctcctgcccc tgcagatcct 50
```

24

```
actgctatcc ttagccttgg aaactgcagg agaagaagcc cagggtgaca 100

agattattga tggcgcccca tgtgcaagag gctcccaccc atggcaggtg 150

gccctgctca gtggcaatca gctccactgc ggaggcgtcc tggtcaatga 200

gcgctgggtg ctcactgccg cccactgcaa gatgaatgag tacaccgtgc 250

acctgggcag tgatacgctg ggcgacagga gagctcagag gatcaaggcc 300

tcgaagtcat tccgccaccc cggctactcc acacagaccc atgttaatga 350

cctcatgctc gtgaagctca atagccaggc caggctgtca tccatggtga 400

agaaagtcag gctgccctcc cgctgcgaac cccctggaac cacctgtact 450

gtctccggct ggggcactac cacgagccca gatgtgacct ttccctctga 500

cctcatgtgc gtggatgtca agctcatctc cccccaggac tgcacgaagg 550

tttacaagga cttactggaa aattccatgc tgtgcgctgg catccccgac 600

tccaagaaaa acgcctgcaa tggtgactca gggggaccgt tggtgtgcag 650

aggtaccctg caaggtctgg tgtcctgggg aactttccct tgcggccaac 700

ccaatgaccc aggagtctac actcaagtgt gcaagttcac caagtggata 750

aatgacacca tgaaaaagca tcgctaacgc cacactgagt taattaactg 800

tgtgcttcca acagaaaatg cacaggagtg aggacgccga tgacctatga 850

agtcaaattt gactttacct ttcctcaaag atatatttaa acctcatgcc 900

ctgttgataa accaatcaaa ttggtaaaga cctaaaacca aaacaaataa 950

agaaacacaa aaccctcaa 969
```

```
<210> 16
<211> 1195
<212> DNA
<213> Homo sapien

<400> 16
 ccgagactca cggtcaagct aaggcgaaga gtgggtggct gaagccatac 50

 tattttatag aattaatgga aagcagaaaa gacatcacaa accaagaaga 100

 actttggaaa atgaagccta ggagaaattt agaagaagac gattatttgc 150

 ataaggacac gggagagacc agcatgctaa aaagacctgt gcttttgcat 200

 ttgcaccaaa cagcccatgc tgatgaattt gactgccctt cagaacttca 250

 gcacacacag gaactctttc cacagtggca cttgccaatt aaaatagctg 300

 ctattatagc atctctgact tttctttaca ctcttctgag ggaagtaatt 350
```

25

caccctttag caacttccca tcaacaatat ttttataaaa ttccaatcct 400

ggtcatcaac aaagtcttgc caatggtttc catcactctc ttggcattgg 450

tttacctgcc aggtgtgata gcagcaattg tccaacttca taatggaacc 500

aagtataaga agtttccaca ttggttggat aagtggatgt taacaagaaa 550

gcagtttggg cttctcagtt tctttttgc tgtactgcat gcaatttata 600

gtctgtctta cccaatgagg cgatcctaca gatacaagtt gctaaactgg 650

gcatatcaac aggtccaaca aaataaagaa gatgcctgga ttgagcatga 700

tgtttggaga atggagattt atgtgtctct gggaattgtg ggattggcaa 750

tactggctct gttggctgtg acatctattc catctgtgag tgactctttg 800

acatggagag aatttcacta tattcagagc aagctaggaa ttgtttccct 850

tctactgggc acaatacacg cattgatttt tgcctggaat aagtggatag 900

atataaaaca atttgtatgg tatacacctc caacttttat gatagctgtt 950

ttccttccaa ttgttgtcct gatatttaaa agcatactat tcctgccatg 1000

cttgaggaag aagatactga agattagaca tggttgggaa gacgtcacca 1050

aaattaacaa aactgagata tgttcccagt tgtagaatta ctgtttacac 1100

acatttttgt tcaatattga tatattttat caccaacatt tcaagtttgt 1150

atttgttaat aaaatgatta ttcaaggaaa aaaaaaaaaa aaaaa 1195

<210> 17
<211> 6255
<212> DNA
<213> Homo sapien

<400> 17
 ggtggagaca ccgcctcagg gctcggtgca cagtggacat ttggggagcg 50

 ttgtgggtga cccccacaca ggcactggga atgcagggga gaggggggcca 100

 aggggaaag gggccagagt gttggctttg gattcaggag ggatggattc 150

 cagtcctagc ttgccactta ttaggactcc tgagagcagc ctccatgagg 200

 ccctggacca gtgcatgacc gccctggacc tcttcctcac caaccagttc 250

 tcagaagcac tcagctacct caagcccaga accaaggaaa gcatgtacca 300

 ctcactgaca tatgccacca tcctggagat gcaggccatg atgacctttg 350

 accctcagga catcctgctt gccggcaaca tgatgaagga ggcacagatg 400

 ctgtgtcaga ggcaccggag gaagtcttct gtaacagatt ccttcagcag 450

```
cctggtgaac cgccccacgc tgggccaatt cactgaagag gaaatccacg 500

ctgaggtctg ctatgcagag tgcctgctgc agcgagcagc cctgaccttc 550

ctgcagggtt cctcacacgg aggggcagtc aggcccagag ccttgcatga 600

tccctctcac gcctgcagct gcccacctgg gccaggccgt cagcatcttt 650

tcctcctgca ggacgagaac atggtgagct tcatcaaagg cggcatcaaa 700

gttcgaaaca gctaccagac ctacaaggag ctggacagcc ttgttcagtc 750

ctcacaatac tgcaagggtg agaaccaccc gcactttgaa ggaggagtga 800

agcttggtgt aggggccttc aacctgacac tgtccatgct tcctactagg 850

atcctgaggc tgttggagtt tgtggggttt tcaggaaaca aggactatgg 900

gctgctgcag ctggaggagg gagcgtcagg gcacagcttc cgctctgtgc 950

tctgtgtcat gctcctgctg tgctaccaca ccttcctcac cttcgtgctc 1000

ggtactggga acgtcaacat cgaggaggcc gagaagctct tgaagcccta 1050

cctgaaccgg taccctaagg gtgccatctt cctgttcttt gcagggagga 1100

ttgaagtcat taaaggcaac attgatgcag tgagtgatgg gggtccgggc 1150

cggggctggg gatccctcgg ggtctcccag accagcagga agtcaggcac 1200

atgtgacata ctcagggaca ggatagactg ggggcggggg gggggccaag 1250

agagaaccaa ccagagagca ggggcaggag aggcccttct ggcagagcag 1300

cctgggaaga caagggagga ggaggcattt gtggtgcctg ggattttgac 1350

tgggagatat aggactgcag cattgcagtg gagggaggtg gagggaggtg 1400

cttgagggag gcagaggtta ggaaagccca tctgtttagg gcatgacgat 1450

taggctggag tctggtacct cccctccatt atagctctct cctgctcttt 1500

cattttgtta ctaaaaacca gagtcctagg cggggctgt atttgagccc 1550

aacgtcatgt aagacttagg aggtaaaacc aggactggag gccagatctc 1600

ctggctcctg gggccccacc tgagcctagc acagggctgg accactatgc 1650

cctggaggag tcccggtctg ctgtggtgtt gggaggttcg gaggatgcag 1700

aggggttggg gctgggtggg cacccgtcag gctgaccaga aggtgcctgc 1750

aggccatccg gcgtttcgag gagtgctgtg aggcccagca gcactggaag 1800

cagttccacc acatgtgcta ctgggagctg atgtggtgct tcacctacaa 1850

gggccagtgg aagatgtcct acttctacgc cgacctgctc agcaaggaga 1900
```

27

```
actgctggtc caaggtgggc tgatgccacg tgttaggggc attgggtgac 1950

cagggctgac tgtgtgcctc cagaccacgg gccaaatccc taactgaaca 2000

cagatgtctc agctggaatc taaacataac cttaaattct aataggactc 2050

aggcttggaa ggaactaaag accacaagag aaacttctga accacaatgt 2100

gtcacaaaga gatttctagt cacaaaggac agaaacatgg ctccctctgt 2150

ccagtagaac tgtttctgtg gtagaaatgt tctacttatg cactgcccaa 2200

atatggtagt caccagccac atgtgcacaa tgagcacatg aaatgtgcct 2250

agtgcaactg ggaaactgat tgttttcagt tttatttaat tttaattaac 2300

taaatgttaa atttaaatag ccatgtaggg cttgtggcca ctatattgga 2350

ctatgcaggt ccaaaacaca aaaggctcat ataactgaac attcttggca 2400

catccgactt caggtagggc tggatccagg aattcaaatg atgtcgtctg 2450

gcttggtctt tccatttgtg gctgtgctct ctcctatgac atctttgttt 2500

ctgctgcatc tttgcaggaa ggttctctcc atgtgacagg caaggtggcc 2550

acgggctgct tctactcata tcctcccctt ggtttcaacc agagtcccac 2600

agtttgagcc tcactggtct gacttgtcac ctgccaatgc ctggaacaga 2650

ggggtgggaa gattcctcat gggctgagag taggagaggg gtggttccac 2700

agaagaaaat gatgcaccca gaaatagtgg agggattaac aagatgccat 2750

acaggcaaaa caaagccaaa cagatgcccg cctaccaaag atgaaattta 2800

tcatggtaag tattgaaata agtgttagct tgtaccatca tagtaatgat 2850

agtgcagaaa ttggaaccaa gagtcttaca accacctagc tcagcaaacg 2900

tctaatctgt tatttgtaaa tacacaggac atgtgtcttc atggcttcat 2950

cccctgccca tagcagacat tgctaatcaa tcctctgcca tgagcctagc 3000

tgtgacctta gataccttcc ctgcaaagct ccaggcagcc gttagaactg 3050

acccacattg gcacctgtta ggagacctgt catctgcatc tggtccctcc 3100

ccctcctctg catggaggtc tcttccgtag ccctgcctgg gaccaagct 3150

gaaggggaat tctctgggtc tggggcaggt ggggctgggg aagggagcag 3200

gcttctactg agctctcaac atgtctggca cctgtcatgt cctccacacc 3250

acacccagtg aggagaagtt attatctcca ttgggcacat gagggccact 3300

gatgctaagc gaggactgtg actttcccac ccacatggct gttggtgaca 3350
```

28

```
gacaccggat ttgaggacag tcctgtgtga ctcagaggcc tctgcttctc 3400

tcttgctcct agagtcctcc tgaggagtcg gggcttgccc tgagcccacc 3450

ctgctgttga aggtgcttcc tcaggcccag ctcccatggc ccccacaccc 3500

cctcctcatc acctcctact cccaaaaagg acaaagcctc agggaacctt 3550

ttttcttttt ttagagacag ggtcttgcta tgttggtcag gctagtcttg 3600

aactcctggg cccaagcaat cttcccacct ctgcctccta aagtgctggg 3650

attctgggcc ttagggaacc tttttgaact gaaagtgact ctcgaagcct 3700

tcctgtagag tgaggtgggt ggctggggct aaccatatgg ggaaggagag 3750

acctggtggg ggcacacagc tgctatatag aggaacagaa ggtgggccag 3800

gcctcccagc tgtcaggaaa tctggctcag tccccagacc gctgtgtggc 3850

tttggggtgg ccagtccctc tctctctgca acactctcct catgaggact 3900

tctgtgaaaa atgggggttg taaccctctg agttctgggg ccccacccat 3950

ttctaatctc cagaacttgg ccaccacaga ctccaccaac ttctagtcct 4000

ggggcctggg cctctggcca ttgccatagg caccacctgc tctgtgcagg 4050

cagcgccccc ctctgccagg atcctccgag gtcagctgct gggtctgacc 4100

cgcagaccct ggctgagcga cggatgaacg gagtatgcag acacaggctt 4150

gcctgtcagc agatggggga cccctgccag agtcagcagc ggcccccata 4200

agcctgccac gcttgcattt atttagtaca gatgtaatga caaaggccta 4250

aagcaaactc catttgtggg taattaacat tgtcgccccc ccagaaagag 4300

cagtcctccg catgatgatt aaaggccagg ttccgaggcc taagtaaacc 4350

aacttatcta gatcaattcc cttacttctt gttatctact ctgagagaat 4400

tcagctgcct tcagccaaat cctttcccga agcttttgca aaacctccga 4450

gccttccaag gtttgcttct ttctgtaatt tttctcacca ccctgaccta 4500

tctcctgcag tcagccctgt ggaggccttt gtgtttcccc cagtgctggc 4550

agcctagagg ctgagatggc cagaaacaag gtggtgacag tggcgtgctc 4600

agggcttggg aaacccaagg agctaaaggc atgcccaggc aaccaaagag 4650

gacaggaagg cttctgagga gagacctctg aggtgggtct tggagaggaa 4700

ggacttaggg aggcagagtg gaggaagtga gaggacaccc caagccaaga 4750

gggcggcagg accaaaggct cagaagccag ggcgctgcag aggggctgtg 4800
```

29

```
tgccacaggg tgaagagttt gtgtggcaga agggcagggg gcttgcatca 4850

ggggtgacag ctgctctttt gtcccagcat agcccctgta catccctgga 4900

gagctggggc gtccacaact ctaagtcaca gcccccatcc taaccctggt 4950

ggtgcagtga gggtgagctg tctgtgggca ggagggaaga ctcttggaga 5000

tgagcctggt gaagggataa tggcatcccg ggccgaggag cagcacaggc 5050

agaggcctgg ggagagttta aggagtgtag gggaggaaat ggcagaagat 5100

gagccagaaa aagaaaggtt agggcaggtc ctggaggaca tgagtggctg 5150

tttgggcttt atccagcagt gggggagcct tggcaggctt gtggcttaga 5200

taggtgcttt agaaagccca ccagcagttg ctgggccacc ccgctggctg 5250

ggtcctgttc taaggcagga aatacaagca tgagcaggaa aagaccccct 5300

caaggctcac gtcctagtgg ggagacaaga aacacagatg ggcaatataa 5350

cacgatgtct ggttccagta agtgcagtga agaacaagcg aggctggatg 5400

cagggagtga tgggaggggc tttgtaaggg gaggtcgggg gaagcctgtc 5450

tcagaggaca ccagaatgga gcgcaggagc·agcacgtggc agtcacatgg 5500

caggccgtta gggcagaggg agctgggcag ggcacagcag ggcaggagtg 5550

tgtttgatgt gtcctgggaa ccgccctgag gccgtcgtgt ggctggagtg 5600

ctgcaggtgt caaggaaatt gtaggagatg tctcctgagt gtgatggaat 5650

ataaccagat ttccagaagg aactgacatg atctgactta aaaaggtcag 5700

tgtgcgaaat ggcttgcagg ggacaggagt gggagcaggg agataggaga 5750

caatgtgtac caggacagca gaaagacatc ccgggtagcc tggaacaggg 5800

agacggtgtg gagatggtgg cagtccgata atgagagccg tagggcaagg 5850

ccagcaggat cctagagtga gacgggaggt aaagtcaccg ggacttggtg 5900

tctccacgtc aggggcaggg gaaagggaga ggacaagggt gacccgggag 5950

gttaaagatg ggaccggggc cagacgcagt ggctcatgcc tgtaatccta 6000

gcactttggg aggctgaggc gggcggatag cttgaggtca ggagtttgaa 6050

accagcctgg ccaacatggt gaaaccccgt ctctactaaa atatacaaaa 6100

attagcctgg cgtggtggtg catgcctgca gtcccagcta ttcaggaggc 6150

tgaggcaaca agaatcgctt gaacctggga ggcggaggtt gcagtgagcc 6200

gagatcgcgc catagcactc cagccttagc ctgggcgaca gagcgagacc 6250
```

acatc 6255

```
gagcagcgcg gcctgacggg accaaggcgg cgggagtctg cggtcgttcc 50

ctcggctgtg gaccgggcgg cacgcacgcg gtgcagggta acatggcgga 100

tgcggaagta attattttgc caaagaaaca taagaagaaa aaggagcgga 150

agtcattgcc agaagaagat gtagccgaaa tacaacacgc tgaagaattt 200

cttatcaaac ctgaatccaa agttgctaag ttggacacgt ctcagtggcc 250

ccttttgcta aagaattttg ataagctgaa tgtaaggaca acacactata 300

cacctcttgc atgtggttca aatcctctga agagagagat tggggactat 350

atcaggacag gtttcattaa tcttgacaag ccctctaacc cctcttccca 400

tgaggtggta gcctggattc gacggatact tcgggtggag aagacagggc 450

acagtggtac tctggatccc aaggtgactg gttgtttaat cgtgtgcata 500

gaacgagcca ctcgcttggt gaagtcacaa cagagtgcag gcaaagagta 550

tgtggggatt gtccggctgc acaatgctat tgaagggggg acccagcttt 600

ctagggccct agaaactctg acaggtgcct tattccagcg accccacctt 650

attgctgcag taaagaggca gctccgagtg aggaccatct acgagagcaa 700

aatgattgaa tacgatcctg aaagaagatt aggaatcttt tgggtgagtt 750

gtgaggctgg cacctacatt cggacattat gtgtgcacct tggtttgtta 800

ttgggagttg gtggtcagat gcaggagctt cggagggttc gttctggagt 850

catgagtgaa aaggaccaca tggtgacaat gcatgatgtg cttgatgctc 900

agtggctgta tgataaccac aaggatgaga gttacctgcg gcgagttgtt 950

tacccttttgg aaaagctgtt gacatctcat aaacggctgg ttatgaaaga 1000

cagtgcagta aatgccatct gctatggggc caagattatg cttccaggtg 1050

ttcttcgata tgaggacggc attgaggtca atcaggagat tgtggttatc 1100

accaccaaag gagaagcaat ctgcatggct attgcattaa tgaccacagc 1150

ggtcatctct acctgcgacc atggtatagt agccaagatc aagagagtga 1200

tcatggagag agacacttac cctcggaagt ggggtttagg tccaaaggca 1250
```

```
agtcagaaga agctgatgat caagcagggc cttctggaca agcatgggaa 1300

gcccacagac agcacacctg ccacctggaa gcaggagtat gttgactaca 1350

gtgagtctgc caaaaaagag gtggttgctg aagtggtaaa agccccgcag 1400

gtagttgccg aagcagcaaa aactgcgaag cggaagcgag agagtgagag 1450

tgaaagtgac gagactcctc cagcagctcc tcagttgatc aagaaggaaa 1500

agaagaagag taagaaggac aagaaggcca aagctggtct ggagagcggg 1550

gccgagcctg gagatgggga cagtgatacc accaagaaga agaagaagaa 1600

gaagaaagca aaagaggtag aattggtttc tgagtagtga aggccacttg 1650

aagctggagg agaaactaaa gccttattga gaaaacatgt tatagatcct 1700

tttgttgctg agagagtgga acataggtcc tagacagggt gaagagttct 1750

ggcacatttt agctgctact ttgagacctc ggtgatgtta cctggtgtgg 1800

tcatcccatc ttgtcctgtt ttaaggatat gggtggtgaa agatgaaaga 1850

ggcagagttt atcccaatga cttctctgtt tgagttggga agcctcacct 1900

tcagacccag taactgtccg cagctgtctg ctagtggttg tcttaacatc 1950

gtagtcctag tttgcatttt ttaaatcccc tctgtttaaa aggtttgtaa 2000

aacaaaaaca aaaaactaag tctgctcagt gaaatgctgt agaaccctaa 2050

ataagtggta gaagagtgtc actgaatttt gtctctgaat tcagtataac 2100

tgagttttgt ccatgctggt gtctgggtta taggcctgat gggcctggta 2150

gttttccatc ttgttctggc ctagaggtca gtcctttgca cttcctcaaa 2200

gcttgtgtac agtgctcacc taaatccatc tgactacttg ttcctgtgcc 2250

ctcttgtttt aggcctcgtt tacttttaaa aaatgaaatt gttcattgct 2300

gggagaagaa tgttgtaatt tttacttatt aaagtcaact tgttaagttt 2350

tttatgtatt cctgttgggt tttcttgttg atctcatgct agcagagcaa 2400

aaattgtaaa atattttgat taaaaatcta gggacccttta tgtcctcattt 2450

ggaattcgat atcaa 2465
```

<210> 19
<211> 2289
<212> DNA
<213> Homo sapien

<400> 19
```
ggcacgaggc tacaaagcag gaaagtatgc ttgggagagg ccaagtgagt 50
```

```
ggggaatcag cccaaagcca ggcgtccagg gtctccctca cctgaagctg 100

actttttccc caccttggac agagggcggg agatgccatc cccactgaac 150

ccagtgcttt caccagccat attagctccc actcacccccc cgtcgtggaa 200

gcctcggccg tcacacctgc agggccgggg cgtgcatggc ctcagggatg 250

gcctgttcag ctgctgggtg actcgggtcc aggtgcctca ccacctgctg 300

agctctgtgt gatttctgga cgcttctgct cgttgccttt gggctcagtg 350

aagagtctgg agtttatctg gagtgaggtg gccggttctt ggtgggatct 400

gagcaggaca gcgtctggct ccttccctcg gctcatggcc ctcagaatct 450

gcgtcacata caccccagct ctcccgatag gtctctgcac tcgctgttgc 500

ctctgcctgg aacagtctcc ctcctggtgt cattgtctcc gtggtgtgtc 550

cttcctgacc ttccacctcc accagtctgt ccccccttggg gacagggact 600

cgttgctcat gttcacccgg caggctggac acttcgtgga gggctccaaa 650

gctggcagat cccgggggccg cctctgtctc tcccaggccc tgcgtgttgc 700

ggtgagagga gcatttgtgt ctctgtggtt tgctgctgga gctggtgacc 750

gggagagaaa caagggagac aagggtgccc agacaggtgc ggggctcagc 800

caggaggcag aagacgtgga cgtgtcccgg gccaggaggg tcacagatgc 850

accacaaggc actctgtgtg gcactgggaa caggaattct gggagtcagt 900

ctgcaagggc ggtgggcgtt gctcacctgg gagaagcctt tagagtgggc 950

gttgagcagg ccattagctc gtgccctgag gaggtgcatg ggcggcatgg 1000

gctctccatg gaaattatgt gggcgcgaat ggatgtggct ctgcgctcac 1050

ctgggcgagg acttctggcc ggtgccgggg cactctgcgt gaccctggca 1100

gaatcgagct gccctgacta tgaaagggga agaagagcat gcctgaccct 1150

ccaccggcac cccacccctc actgctccac ctggggcctg cctctgcggg 1200

tggctgggtc ctggctgact gttgtgactg ttgaggccct ggggggtgg 1250

cgcatgggag ttaggaggac tggccaggtg gggcccacta tgcacccacc 1300

cccagtgtca ggtgcttctc ctctcctcct ccaccacctc ctcctcctcc 1350

tcctcatcat catcctcact tgttgaggac gtcctgtgtg ccaagtggtt 1400

tatatgccca gcctcattta atcctcagaa tgactccatg aggtagctac 1450

taaaaccccc cacttaacag atgaggaaac tgaggcctag agaagctcaa 1500
```

33

```
taagttgcct aagttccaag tttcctctcc caactctcct accctctcct 1550

cttccttctc ctttctccca ttcttccctg cctcttccct aactagacaa 1600

tttttttattg agtgtctccc aggtgcaggc atgagccagg tgctgggaaa 1650

atcatgataa cccagctcct tctggtcatt ttctcagctg gttagaggct 1700

gggaggacac gcaagttcag ctccagccga ctggggcatt ggtggtagcc 1750

cctggagaca ttgtgcaatg gggctacgag gctgcatctg gctccaggga 1800

agcgtgttgc aatccatgag tgatgtctgc catgcgtaca ggcatggaga 1850

gtgaggcgcc tgtactgtct ttctgtagac cctagactgg tggggcctct 1900

gaaatgcatc cagacactgt gctgggtgtg ttgcatggcc ctcccaacca 1950

attcagtatt tttctcccca ttttccaggg agaaatctaa ggcgtcagaa 2000

tgtaaggttc ttattggaac ccaggctcca gggtccctgg ttttctgtga 2050

catcatgctg caggaccctg tttctctctt tgctttggct gctggggagc 2100

tcagaaggga gctttaggct tgctctcagt caccacatta gctcaggggt 2150

ttgggcattt ttgtcgccgt ctcctttggg ctctgtctcc tccctgctgt 2200

gcttcctgag gagcaggccg gatgtaagtt atcaactata aataaaacca 2250

agacttccgt tctggctctc aaaaaaaaaa aaaaaaaaa 2289
```

<210> 20
<211> 2835
<212> DNA
<213> Homo sapien

<400> 20
```
gtacagaagc aaaatcaaac ctgctatttc agcactcctg tttttaactt 50

ggtgtcttta gtgcttggat tggtgggatg tttcggaatg ggcattgtcg 100

ccaattttca ggagttagct gtgccagtgg ttcatgacgg gggcgctctt 150

ttggcctttg tctgtggtgt cgtgtacacg ctcctacagt ccatcatctc 200

ttacaaatca tgtccccagt ggaacagtct ctcgacatgc cacatacgga 250

tggtcatctc tgccgtttct tgcgcagctg tcatccccat gattgtctgt 300

gcttcactaa tttccataac caagctggag tggaatccaa gagaaaagga 350

ttatgtatat cacgtagtga gtgcgatctg tgaatggaca gtggcctttg 400

gttttatttt ctacttccta actttcatcc aagatttcca gagtgtcacc 450

ctaaggatat ccacagaaat caatggtgat atttgaagaa agaagaattc 500
```

34

agtctcactc agtgaatgtc gcaggccatt tctaaaagtg ctacagagga 550

cagacagggt tttgaggcca ccctgattat tgggatgcat ctgcagcaca 600

tccaggactt gaatttcatt acgagttcct aatagttgta tttctaaaga 650

tgtgtttcct agagaatgta cagccttatg acactgtagt gatgttttta 700

taattttcta agtagatttt tttatattaa caaattcata tacagaaaaa 750

ataaggtgtt acaaaaaatg gagagctctt attttgtac agattctgtc 800

gtttttttt atttgtgtga gatttatgga aatacactaa atgagtaatt 850

caggttcagt acatttatta caaagtgaaa tcaggggata ttcatttgta 900

aattttattc ttagtgaatg aactgtataa tttttttat caggagagca 950

cttataaaat tcaatttata aagatcatat acccaaatca taaagattta 1000

gttgatacat taacactaag atactctgat ttttagcgaa ctaaacaaag 1050

tgcttctact gagaggcctt tataccacca tgtacagtaa ctctaagtga 1100

atacggaaga ccttggtttt gaaattctgc caccttgttt ctccctgctc 1150

atgaggtcgc accttttgct cttgctgcta attgcccatt cgtagtgggt 1200

gtaatgccag gtggaatggt ttcaacaagt caggtgaaaa ccatccttta 1250

ttgttgctgg cacaacttga tatatagtct gactcagaac tgaagctcac 1300

atctcaaatt catttcatgc cagtaaatgt ggcaaagaga agaaaggccc 1350

aagagcgaga caagaagaat ggagaagggg gcagccaaga agaacttctg 1400

ggttcagggt actgtttatt tgctccttct cttcatgcct gtggctggat 1450

gtcccacaac actataagaa atataagtca agccctttgt gttaagcaag 1500

aactacagac tccatctttt cacccaaatc atgaatgacc aataaaaagc 1550

aagttattcc agaggaagaa gcagcccttg aaatgttaag gcttaggctt 1600

gaaaggtgaa gagcaggaat tctctctttc aaatcctaga gcataaaccc 1650

atgtgtggcc aagtgagatc agccctcaag ggcacatgcc aagggcagag 1700

cagcccatgt agacagcttc ggagggcatg ggggtgtagg gagttcgggg 1750

tagctcctca ttaactattt gttgggtgag taaaggggtg aggctcagtg 1800

gcaggtacct ctgcaatgac aagctgcctc ccctctatgt gtttagcata 1850

tgttattaga acatgtccga cacccctacc gctgccattt gggccccttta 1900

ataaagccaa gtagagaaat ctggcaataa aaggcaaatg taagcatgct 1950

```
ttctttaaga cgcatcataa atggttttct ttaagtgaat ggaagagttt 2000

gacagagata cacctttgta agaaaacatt aagaatgctg gctggctgtg 2050

gtggctcaca cctgtattcc cagcactttg ggaggcctag gcaggaggat 2100

tgcttgagcc tgggacttcg agaccagact gggaaacatg gcaaaatccc 2150

atctctacaa caaaaataca aaaattagcc aagtgcggtg gtgtgcctgt 2200

agtcctagtt acttgggagg ctgaggtggg agaatcacct gagcccagga 2250

ggtggaggct gcagtgagcc atgccaatgc actccagtct gggcaacaga 2300

gtgagaccct gtctcaaaaa taaataaata aataaatgaa taaagagaat 2350

gctaatcatt tctgggttca ctgcgactca ctgtagtgct ggggatcccc 2400

cttgtaacac tggaactgaa aggcagtgat gaaagctatg tcaagcattc 2450

attattctga agaggaggag aaatgccaca tacctttccc atgggacctg 2500

tggtggaatg aatccatact tctgcctcac ttcgagcaga cttttgttct 2550

cggcgctcct cacgatggag tttcatgctt cattttcaca tctctctgca 2600

caattagatt gggagctcct tgagggcaga gtacgtgcct taatctttat 2650

ctttgtaatg ccacaatgaa cagagtgcct cctggtacac tgtaggagct 2700

taagaaatac tcactgaatg catgaatgaa tgaatgaaca aatgaaggaa 2750

tgactaagga tgtttgtagt gctataatat agaatgggat ttactctgct 2800

ttaccagtta gtttcataat aaacaaatag tctgt 2835
```

<210> 21
<211> 3178
<212> DNA
<213> Homo sapien

<400> 21
```
ggcaccgatt cggggcctgc ccggacttcg ccgcacgctg cagaacctcg 50

cccagcgccc accatgcccc ggcagctcag cgcggcggcc gcgctcttcg 100

cgtccctggc cgtaattttg cacgatggca gtcaaatgag agcaaaagca 150

tttccagaaa ccagagatta ttctcaacct actgcagcag caacagtaca 200

ggacataaaa aaacctgtcc agcaaccagc taagcaagca cctcaccaaa 250

ctttagcagc aagattcatg gatggtcata tcacctttca aacagcggcc 300

acagtaaaaa ttccaacaac tacccccagca actacaaaaa acactgcaac 350

caccagccca attacctaca ccctggtcac aacccaggcc acacccaaca 400
```

```
actcacacac agctcctcca gttactgaag ttacagtcgg ccctagctta 450

gccccttatt cactgccacc caccatcacc ccaccagctc atacagctgg 500

aaccagttca tcaaccgtca gccacacaac tgggaacacc actcaaccca 550

gtaaccagac caccettcca gcaactttat cgatagcact gcacaaaagc 600

acaaccggtc agaagcctga tcaacccacc catgccccag gaacaacggc 650

agctgcccac aataccaccc gcacagctgc acctgcctcc acggttcctg 700

ggcccaccct tgcacctcag ccatcgtcag tcaagactgg aatttatcag 750

gttctaaacg gaagcagact ctgtataaaa gcagagatgg ggatacagct 800

gattgttcaa dacaaggagt cggttttttc acctcggaga tacttcaaca 850

tcgaccccaa cgcaacgcaa gcctctggga actgtggcac ccgaaaatcc 900

aaccttctgt tgaattttca gggcggattt gtgaatctca catttaccaa 950

ggatgaagaa tcatattata tcagtgaagt gggagcctat ttgaccgtct 1000

cagatccaga gacagtttac caaggaatca aacatgcggt ggtgatgttc 1050

cagacagcag tcgggcattc cttcaagtgc gtgagtgaac agagcctcca 1100

gttgtcagcc cacctgcagg tgaaaacaac cgatgtccaa cttcaagcct 1150

ttgattttga agatgaccac tttggaaatg tggatgagtg ctcgtctgac 1200

tacacaattg tgcttcctgt gattggggcc atcgtggttg gtctctgcct 1250

tatgggtatg ggtgtctata aaatccgcct aaggtgtcaa tcatctggat 1300

accagagaat ctaattgttg cccggggggga atgaaaataa tggaatttag 1350

agaactcttt catcccttcc aggatggatg ttgggaaatt ccctcagagt 1400

gtgggtcctt caaacaatgt aaaccaccat cttctattca aatgaagtga 1450

gtcatgtgtg atttaagttc aggcagcaca tcaatttcta aatacttttt 1500

gtttatttta tgaaagatat agtgagctgt ttattttcta gtttcctttta 1550

gaatatttta gccactcaaa gtcaacattt gagatatgtt gaattaacat 1600

aatatatgta aagtagaata agccttcaaa ttataaacca agggtcaatt 1650

gtaactaata ctactgtgtg tgcattgaag attttatttt acccttgatc 1700

ttaacaaagc ctttgctttg ttatcaaatg gactttcagt gcttttacta 1750

tctgtgtttt atggtttcat gtaacataca tattcctggt gtagcactta 1800

actccttttc cactttaaat ttgtttttgt tttttgagac ggagtttcac 1850
```

37

```
tcttgtcacc caggctggag tacagtggca cgatctcggc ttatggcaac 1900

ctccgcctcc cgggttcaag tgattctcct gcttcagctt cccgagtagc 1950

tgggattaca ggcacacact accacgcctg gctaattttt gtattttat  2000

tatagacggg tttcaccatg ttggccagac tggtcttgaa ctcttgacct 2050

caggtgatcc acccacctca gcctcccaaa gtgctgggat tacaggcatg 2100

agccattgcg cccggcctta aatgtttttt ttaatcatca aaaagaacaa 2150

catatctcag gttgtctaag tgtttttatg taaaaccaac aaaaagaaca 2200

aatcagctta tattttttat cttgatgact cctgctccag aattgctaga 2250

ctaagaatta ggtggctaca gatggtagaa ctaaacaata agcaagagac 2300

aataataatg gcccttaatt attaacaaag tgccagagtc taggctaagc 2350

actttatcta tatctcattt cattctcaca acttataagt gaatgagtaa 2400

actgagactt aagggaactg aatcacttaa atgtcacctg gctaactgat 2450

ggcagagcca gagcttgaat tcatgttggt ctgacatcaa ggtctttggt 2500

cttctcccta caccaagtta cctacaagaa caatgacacc acactctgcc 2550

tgaaggctca cacctcatac cagcatacgc tcaccttaca gggaaatggg 2600

tttatccagg atcatgagac attagggtag atgaaaggag agctttgcag 2650

ataacaaaat agcctatcct taataaatcc tccactctct ggaaggagac 2700

tgaggggctt tgtaaaacat tagtcagttg ctcattttta tgggattgct 2750

tagctgggct gtaaagatga aggcatcaaa taaactcaaa gtattttaa  2800

attttttttga taatagagaa acttcgctaa ccaactgttc tttcttgagt 2850

gtatagcccc atcttgtggt aacttgctgc ttctgcactt catatccata 2900

tttcctattg ttcactttat tctgtagagc agcctgccaa gaattttatt 2950

tctgctgttt ttttgctgc  taaagaaagg aactaagtca ggatgttaac 3000

agaaaagtcc acataaccct agaattctta gtcaaggaat aattcaagtc 3050

agcctagaga ccatgttgac tttcctcatg tgtttcctta tgactcagta 3100

agttggcaag gtcctgactt tagtcttaat aaaacattga attgtagtaa 3150

aggtttttgc aataaaaact tactttgg 3178
```

<210> 22
<211> 1741
<212> DNA
<213> Homo sapien

<400> 22

```
cagaggtagc ctgaaagaag caggaactcc aggatcccaa accagagcag 50

accctatagt aaagtatttt tacatctttt cctttcccca gaagagatcc 100

ctaacctatt gttttattga cagccttgct gttagaggct ctttcccaga 150

agttggacga agaggctcag gcgttgctgt ttcttgtctt ccaagtcaag 200

tggttactct ggtaatggat tgcctctctc cgagctttca ccctggtgag 250

actgtccaga tctagtctgt aaacccagct tagaagcact gttgtaaaaa 300

tgactgaaga gcccatcaag gagatcctgg gagccccaaa ggctcacatg 350

gcagcgacga tggagaagag ccccaagagt gaagttgtga tcaccacagt 400

ccctctggtc agtgagattc agttgatggc tgctacaggg ggtaccgagc 450

tctcctgcta ccgctgcatc atcccctttg ctgtggttgt cttcatcgcc 500

ggcatcgtgg tcaccgcggt ggcttacagc ttcaattccc atgggtctat 550

tatctccatc tttggcctgg ttgttctgtc atctggactt tttttactag 600

cctccagtgc cttgtgctgg aaagtgagac aaaggagcaa gaaagccaag 650

agacgggaga gtcaaacagc tctcgtggca aatcagagaa gcttgtttgc 700

ttgagactga atacgaccaa atgggccatt gggcctggaa aacgtgctct 750

gactttgtca cccaattcac ccagaaccat ggtgggagag aacagacttg 800

gcgttggagc agactggaag aatgggggtg ggagggtgga ggggcttctc 850

ctttgtgagg aatgactcat gtcttcttta acgacaaact taaccctaag 900

ggctacttct gagactgaaa aatcagcttt ctatttacat gaaacacttt 950

gggggtcatg ggagtgcaca gcattagaca gtatttggtt caccctgtaa 1000

agtagccaag aaaagatgag aaaaatcaag ataggcctgg cacactagac 1050

atttgcctcc aaaagaaata acctacagtc ttaagatgta tcataaaaat 1100

gttctgccaa ggatctaaat taccttgggt ttcgcatatg tctatgaaat 1150

tctgtgataa ttttttttcaa tacattgatt cactggcgtc tgttttcatt 1200

ttatactttt aataactcat cactggtggt actttatctt gaaaagtaat 1250

attttttata ttttaacatt ggacagtgtt agccagttgt aatgatgtat 1300

cagaagtaaa gaaaaaccca ttaaagttat agctaataga tgctgttggg 1350

ggttaaatta atagtaaaat aatccaatat agcacttttg atgattttta 1400

tataaaagtc aactgtacat ttcattcaga ataataaata cttattgctg 1450
```

39

ctaaaacttc ttaaatggtt gtttctgcta tagttatttc tattgcagtt 1500

ccaaattgcc atcttccctt gtctcatttg caagttctca attgtatttc 1550

tctcaaatgg acaggttcct tctttactgg aggattttg tttttatcat 1600

attggttttt cattacttct gaatagtctt aattacgttt actaaattct 1650

aaaggatttc tgtgctatta taattaggaa atcaacgtct ttggtcagga 1700

actttataat gtgctattaa atgtatatta cattttttgtg g 1741

<210> 23
<211> 1395
<212> DNA
<213> Homo sapien

<400> 23
 atgctgtcac tgctccacgc atcaacgctg gcagtccttg gggctctgtg 50

tgtatatggt gcaggtcacc tagagcaacc tcaaatttcc agtactaaaa 100

cgctgtcaaa aacagcccgc ctggaatgtg tggtgtctgg aataacaatt 150

tctgcaacat ctgtatattg gtatcgagag agacctggtg aagtcataca 200

gttcctggtg tccatttcat atgacggcac tgtcagaaag gaatccggca 250

ttccgtcagg caaatttgag gtggatagga tacctgaaac gtctacatcc 300

actctcacca ttcacaatgt agagaaacag gacatagcta cctactactg 350

tgccttgtgg gaggtgcggc tagccaacca agagttgggc aaaaaaatca 400

aggtatttgg tcccggaaca aagcttatca ttacagataa acaacttgat 450

gcagatgttt cccccaagcc cactattttt cttccttcaa ttgctgaaac 500

aaagctccag aaggctggaa catacctttg tcttcttgag aaattttttcc 550

ctgatgttat taagatacat tggcaagaaa agaagagcaa cacgattctg 600

ggatcccagg aggggaacac catgaagact aacgacacat acatgaaatt 650

tagctggtta acggtgccag aaaagtcact ggacaaagaa cacagatgta 700

tcgtcagaca tgagaataat aaaaacggag ttgatcaaga aattatcttt 750

cctccaataa agacagatgt catcacaatg gatcccaaag acaattgttc 800

aaaagatgca aatgatacac tactgctgca gctcacaaac acctctgcat 850

attacacgta cctcctcctg ctcctcaaga gtgtggtcta ttttgccatc 900

atcacctgct gtctgcttag aagaacggct ttctgctgca atggagagaa 950

atcataacag acggtggcac aaggaggcca tctttttcctc atcggttatt 1000

40

```
gtccctagaa gcgtcttctg aggatctagt tgggctttct ttctgggttt 1050

gggccatttc agttctcatg tgtgtactat tctatcatta ttgtataacg 1100

gttttcaaac cagtgggcac acagagaacc tcactctgta ataacaatga 1150

ggaatagcca cggcgatctc cagcaccaat ctctccatgt tttccacagc 1200

tcctccagcc aacccaaata gcgcctgcta tagtgtagac atcctgcggc 1250

ttctagcctt gtccctctct tagtgttctt taatcagata actgcctgga 1300

agcctttcat tttacacgcc ctgaagcagt cttctttgct agttgaatta 1350

tgtggtgtgt ttttccgtaa taagcaaaat aaatttaaaa aaatg 1395
```

<210> 24
<211> 3282
<212> DNA
<213> Homo sapien

<400> 24
```
gggacagggc tgaggatgag gagaaccctg gggacccaga agaccgtgcc 50

ttgcccggaa gtcctgcctg taggcctgaa ggacttgccc taacagagcc 100

tcaacaacta cctggtgatt cctacttcag ccccttggtg tgagcagctt 150

ctcaacatga actacagcct ccacttggcc ttcgtgtgtc tgagtctctt 200

cactgagagg atgtgcatcc aggggagtca gttcaacgtc gaggtcggca 250

gaagtgacaa gctttccctg cctggctttg agaacctcac agcaggatat 300

aacaaatttc tcaggcccaa ttttggtgga gaacccgtac agatagcgct 350

gactctggac attgcaagta tctctagcat ttcagagagt aacatggact 400

acacagccac catatacctc cgacagcgct ggatggacca gcggctggtg 450

tttgaaggca acaagagctt cactctggat gcccgcctcg tggagttcct 500

ctgggtgcca gatacttaca ttgtggagtc caagaagtcc ttcctccatg 550

aagtcactgt gggaaacagg ctcatccgcc tcttctccaa tggcacggtc 600

ctgtatgccc tcagaatcac gacaactgtt gcatgtaaca tggatctgtc 650

taaatacccc atggacacac agacatgcaa gttgcagctg gaaagctggg 700

gctatgatgg aaatgatgtg gagttcacct ggctgagagg gaacgactct 750

gtgcgtggac tggaacacct gcggcttgct cagtacacca tagagcggta 800

tttcaccttc agtcaccagat cgcagcagga gacaggaaat tacactagat 850

tggtcttaca gtttgagctt cggaggaatg ttctgtattt cattttggaa 900
```

41

```
acctacgttc cttccacttt cctggtggtg ttgtcctggg tttcattttg 950

gatctctctc gattcagtcc ctgcaagaac ctgcattgga gtgacgaccg 1000

tgttatcaat gaccacactg atgatcgggt cccgcacttc tcttcccaac 1050

accaactgct tcatcaaggc catcgatgtg tacctgggga tctgctttag 1100

ctttgtgttt ggggccttgc tagaatatgc agttgctcac tacagttcct 1150

tacagcagat ggcagccaaa gataggggga caacaaagga agtagaagaa 1200

gtcagtatta ctaatatcat caacagctcc atctccagct ttaaacggaa 1250

gatcagcttt gccagcattg aaatttccag cgacaacgtt gactacagtg 1300

acttgacaat gaaaaccagc gacaagttca gtttgtctt ccgagaaaag 1350

atgggcagga ttgttgatta tttcacaatt caaaacccca gtaatgttga 1400

tcactattcc aaactactgt ttcctttgat ttttatgcta gccaatgtat 1450

tttactgggc atactacatg tattttgag tcaatgttaa atttcttgca 1500

tgccataggt cttcaacagg acaagataat gatgtaaatg gtattttagg 1550

ccaagtgtgc acccacatcc aatggtgcta caagtgactg aaataatatt 1600

tgagtctttc tgctcaaaga atgaagctcc aaccattgtt ctaagctgtg 1650

tagaagtcct agcattatag gatcttgtaa tagaaacatc agtccattcc 1700

tctttcatct taatcaagga cattcccatg gagcccaaga ttacaaatgt 1750

actcagggct gtttattcgg tggctccctg gtttgcattt acctcatata 1800

aagaatggga aggagaccat tgggtaaccc tcaagtgtca gaagttgttt 1850

ctaaagtaac tatacatgtt ttttactaaa tctctgcagt gcttataaaa 1900

tacattgttg cctatttagg gagtaacatt ttctagtttt tgtttctggt 1950

taaaatgaaa tatgggctta tgtcaattca ttggaagtca atgcactaac 2000

tcaataccaa gatgagtttt aaataatga atattattta ataccacaac 2050

agaattatcc ccaatttcca ataagtccta tcattgaaaa ttcaaatata 2100

agtgaagaaa aaattagtag atcaacaatc taaacaaatc cctcggttct 2150

aagatacaat ggattcccca tactggaagg actctgaggc tttattcccc 2200

cactatgcat atcttatcat tttattatta tacacacatc catcctaaac 2250

tatactaaag cccttttccc atgcatggat ggaaatggaa gattttttg 2300

taacttgttc tagaagtctt aatatgggct gttgccatga aggcttgcag 2350
```

42

```
aattgagtcc attttctagc tgcctttatt cacatagtga tggggtacta 2400

aaagtactgg gttgactcag agagtcgctg tcattctgtc attgctgcta 2450

ctctaacact gagcaacact ctcccagtgg cagatcccct gtatcattcc 2500

aagaggagca ttcatccctt tgctctaatg atcaggaatg atgcttatta 2550

gaaacaaac tgcttgaccc aggaacaagt ggcttagctt aagtaaactt 2600

ggctttgctc agatccctga tccttccagc tggtctgctc tgagtggctt 2650

atcccgcatg agcaggagcg tgctggccct gagtactgaa ctttctgagt 2700

aacaatgaga cacgttacag aacctatgtt caggttgcgg gtgagctgcc 2750

ctctccaaat ccagccagag atgcacattc ctcggccagt ctcagccaac 2800

agtaccaaaa gtgattttg agtgtgccag ggtaaaggct tccagttcag 2850

cctcagttat tttagacaat ctcgccatct ttaatttctt agcttcctgt 2900

tctaataaat gcacggcttt acctttcctg tcagaaataa accaaggctc 2950

taaaagatga tttcccttct gtaactccct agagccacag gttctcattc 3000

cttttcccat tatacttctc acaattcagt ttctatgagt ttgatcacct 3050

gattttttta acaaaatatt tctaacggga atgggtggga gtgctggtga 3100

aaagagatga aatgtggttg tatgagccaa tcatatttgt gattttttaa 3150

aaaaagttta aaaggaaata tctgttctga aaccccactt aagcattgtt 3200

tttatataaa aacaatgata aagatgtgaa ctgtgaaata aatataccat 3250

attagctacc caccaaaaaa aaaaaaaaaa aa 3282
<210> 25
<211> 4675
<212> DNA
<213> Homo sapien

<400> 25
 tgctgtcagg gcgctcaagc tgccggggaa gaagagccca gacctagggg 50

 agtatgatcc acttacccag gctgacagtg atgagagcga agacgatctg 100

 gtgcttaacc tgcagaagaa tggaggggtc aaaaatggga agagtccttt 150

 gggagaagcg ccagaacccg actcagatgc tgaggttgca gaggctgcaa 200

 agccacatct ttcagaagtc accacggagg gctacccctc agaacccctt 250

 gggggcctgg aacagaaggc ggcctcctcc ctggtgtcat atgtgcgcac 300

 gtctgtcttc ctgctgactt tggggatctc gatgatcctg gtgctcctgt 350
```

43

```
gtgctttcct gatcccctgt cctcccagag atctgcacag cacctggagc 400

cgccacttgg gctcccaggg aggtggggac ctgtctccat tggaattggc 450

tgatgtgaat ggagatggcc tgcgtgatgt gcttctctcc tttgtgatgt 500

caaggaacgg gagtgcagta ggtgtctcaa gaccagctgc taatcttgtg 550

tgcctttcgg ggatgaatgg cagcacactg tggtctagtc ttctccctga 600

ggaggctcga gatatcacat gtttggagct gatgccagga agcttggctg 650

aaaccatctg ccttgtgaca gggacacaca agatgctcag cgcattcaat 700

gcaacgtcag ggaaagccat ttggacttta aacccaaact acttgtccaa 750

cggtaccttg gctgccccag ttgtggtact gccagacttg gatgaagacg 800

gtgttcgaga ccttgtggtt ctggccattg gggaattgca gccagatctg 850

tgctttctgc tggtgtctgg ccggaccgga aatccagtgg gtcgacctgt 900

gaagtacaac atcgttggag ttgggaatct gattggtcct caggtttaca 950

tcaccacaaa tggggctgtc tacatcctgt ttggctttgg aaatatacaa 1000

gctgtcgcac tgcgggacat ttttgttcag gcccaaaatc gagacagctc 1050

accaccttct ctgcagatag aagagccaga atgggaaaag cgaagatcca 1100

tcaacctgtc tgagctcatt gatgtttaca gtgatggtgt tgaactactc 1150

cagatggtga aggcaccaga ttccaactgc agcaaccttc tgattacaac 1200

cagacaaagc cttgtgctgc ttcgggggca aaatctgaca ccttactggg 1250

cattgagact tcaaggcctg cgcagccagc ctactcctgg atatttcact 1300

gatgatcaga cattagattt ccttctgcag atacaggatg gagttgggat 1350

gaaaaagatg atggttgtgg atggtgactc tggctccatt gtttggagtt 1400

accgtgctcc gtgtcacatg aaagaaacgc cagccacctc agcagttact 1450

tcagaccaga agtctgtctt cctcttctgg gccgaagggc tgtcagctgc 1500

atctcccaat tccgatatca tcctaggaac tgagccgccc agccttcacc 1550

acctttacct cctgcatcct gcgttcccct ccatccttct ggatctggcc 1600

aacaccaccg gcacagtgac ggcttcagag gttggaatta acgacctctg 1650

gaaagatgcc ttttatgtta ccaggacaac agggccaagc tccgaaggcc 1700

atccagcagc cctggtggtc agcaagctta gtctacggtg ggcactaatg 1750

gagggccaga tggctcagct acaggagtcc acccccaaaa ttggccgtgg 1800
```

44

```
ggagctgcga agatttctct ctaggataaa gtttgttgaa gctccctacg 1850

agatctaatc tgatggaatc ttcagttgca gaagaagtga acagagtgga 1900

taccctctct actctcctgt cactgtaaaa tcagttctat ggagagaaga 1950

cttcttcgtc ctcatttacc acctccctga tggttgcaaa ggcttgggaa 2000

ggcatgttgg agtctttgac ggcagcatga tctatttggc tggggcatct 2050

tacctacctt ttcagtccct gcattaatcc cctctaggaa ctctgcgtgg 2100

atcgtttgga aatgtgaatc tcttaagtat ttaatttttt tggtatgtct 2150

aatttatgaa gtcttgctgg gaaagccagt gaagtctatg actaggaaac 2200

attttgttgt acattgtgct gtgtgtgtgt atattttagt gttgtggtga 2250

agttattttc caggtatgtc ctaagcttca gggatccagt ttcttgtcct 2300

tctgaaatat atctggtttg tttggtcatt ttgagacttc cagatgccct 2350

acctctgatg ttgagggcca cttatttctc tccttattct ttcccacctg 2400

taccttggct acttccaaat tgtagacaga atgagaaaga tttatagtgg 2450

aagactgagt tagccatcca agcattttca tctctcttgt tttatatcct 2500

atttccttag attttccatc catgtctatt aagtgaccac aagaataact 2550

atattcctat cacaagggga gcaagaggat gtagtctcag tgacccatct 2600

ctgaccaagt ccacatgttg tgttatatgt ggctctgatg gttctgccag 2650

tcatgatctt ttttctgtgg cgacatcaga agtgtatgtt tgcatgctgt 2700

cttcaactta gaggagaact ggaagtcagg agcctttgat gtccttatcc 2750

tgctgtatgt cttctctgca tctttttcta tagggcaccc tccttagctc 2800

ccctcactct gttttctctt ctattcaggg atatgtttct ggactttttc 2850

ttctgctact tgagtccagg atgcaaccat tttgtcctgc atctcttctt 2900

tcctgtagag cctttgaagc attgtatttt gggaaaattc ttctgtaaat 2950

actataactt ttataaatgg ttaagttatt tagaattatc tccagtgctt 3000

acttctccct tcttctgtat aaatctgcta cttcaattaa gttctcctct 3050

aaacttttag gtcattgttt atatagcaga aaattcaatg ttagcggatg 3100

gaaaactgct tcttgaataa ccttgatagg tcatccctga gtgcacctca 3150

ggttctctct ttacctgggc ttgtatcttt tttttttttt tttttttttt 3200

tttgagacag agttttgctc ttgtcgccca ggctggagtg cagtggcaca 3250
```

45

```
atctcggctc actgcaacct tcgcctcctg ggttcaagcg attctccagc 3300

cttagcctcc caagtagctg ggactacagg tgcccgctac catgcctggc 3350

taattttttt ttttgtattt ttagtagaga cggggtttca ccatgttggc 3400

caggctggtc acgaactcct gacctcagat aatccacctg cttctgcctc 3450

ccaaagtgct gggattacag gcgtgagcca ccatgcccgg ctgggcttgt 3500

atcttttagc ttgtgttagt aaaaggattc tagaaaatta tgaagtccag 3550

attcaaaggg atctctgtta attacccact gacaggcatt atgacctaac 3600

aggaggttgg tagcagtaga tccaagcatg catgttgcct ggcctgtaga 3650

ttggccttat caggtttctg ggtgcctctg ccttaagatc ctgaaggcaa 3700

attttgtttc aacagtttgg aagtcatctg tgggtccagc ttgactttgg 3750

aggaataaga agatacttct agagtatggg aatgattcca gataatttct 3800

gggatttgaa tctacttgag tttaagggcc tgggacctaa tttggtttag 3850

tatagaattt gaagaattaa tttataggca gctgaatacc caaaacttgg 3900

gtggtggtcc tgtggtttgg ctgagctgtc cgggcataac ctggttctct 3950

gttatgttaa ggctttctgg gaagccagcc actctgcgca ggagtgaaac 4000

atgaagttgt tttctgagga cctgttttgg tgggattgtt tgggcagagg 4050

actgtgttta tgcagggcaa atcccagaaa gataagagga agctagagaa 4100

acttaatgta cctgaattct tcatggtgta tttgcaaact aacttaacat 4150

agattctttt gactatggta agtttgaatc tctccttgcc aaacaacatt 4200

ataagtttag ttttcttctt cctcttgcag ccggtacaga aaggtgtaag 4250

tggtggctga aaattgagga agcttcatct gaccaatgtg ggtgctggtt 4300

tcttgtgaaa tgtgtcccta agcctccttc tccttgcagg cagccaccca 4350

cccaggtgtc taagatagga catgctcctt tctttctcta atcccatcct 4400

gaggttgccg gcaaagccaa tatgaccact actgagaaat agtaatgact 4450

tctacaaatg caagggtctt accctcctct ttcccttaaa caccctccct 4500

tttccttaga ccccgttttt gccatccccc aaatgtgtgg tatggtgaaa 4550

ctaatcccct gaatgtgaat tgctatcctt attgccctat taaagaagag 4600

ccagctggta tattgtcagg aagcactatt taaaatgtga actgttatag 4650

agtaaataaa taaatactct acagg 4675
```

46

<210> 26
<211> 3515
<212> DNA
<213> Homo sapien

<400> 26
cgcttagaac tgtgttgagc tctcacccat cacgatgagc aacaaattcc 50

tgggcacctg gaaacttgtc tctagcgaga actttgacga ttacatgaaa 100

gctctgggtg tggggttagc caccagaaaa ctgggaaatt tggccaaacc 150

cactgtgatc atcagcaaga aaggagatat tataactata cgaactgaaa 200

gtacctttaa aaatacagaa atctccttca agctaggcca ggaatttgaa 250

gaaaccacag ctgacaatag aaagaccaag agcatcgtaa ccctgcagag 300

aggatcactg aatcaagtgc agagatggga tggcaaagag acaaccataa 350

agagaaagct agtgaatggg aaaatggtag cggaatgtaa aatgaagggc 400

gtggtgtgca ccagaatcta tgagaaggtc tgaaaaatca tttcttcatt 450

gaagtggctt tttatcattt aatgatggaa atcaattgct tccattgaca 500

aaactgaata cactgcaaat atttgttttt gcttttgtct taatatatca 550

gatatgcaaa ggcctaaact gagaattaat ctaaaagtca gtgttattta 600

aacattttca atgtgcatgc atgtcattat tacatcaaag catatatatt 650

ggccagacac aaacagttga tgatgtcatt caattaacta caaaattcta 700

atctatgttg aactttgtat acttgaaatg ataataaaaa ggatataatt 750

tcttagtaaa atgaaatcaa agtattgatc agggtagcaa actcaaatgc 800

tgacaggggc cagaggagat atggggaagg agcatcagaa atgaggcaag 850

ctaggagaat gggctattat aatgtaaaga attgtagtct cagttaaaag 900

gggtagcctc tactccagcc aacattttaa aattaatgga taatttatag 950

acagttaaat ttatagacag ttaagtaaaa atggataatt tatagacaga 1000

taatttatag acaggtaaat gtgagttaaa tataactcac atcccactca 1050

agacacaaaa cattttctta atcctagtac attttttttct gtcccttccc 1100

aatcagtgtc cttttctgtt ccacccctac caaaagcaag tagtggtttg 1150

gtttctatca tatagattaa ttttacctgc tcatatgaag ggaattgtac 1200

atcatgcatt cttttctgtt tgcctttttt aaattcagca tcatgttttt 1250

gtgatacatc cacattgttg catgcagctg tagtttgttt cttttttatta 1300

47

```
ccaagtacta tttcattgta tgaatatatc acagtttatc cattctacta 1350

ttaagacaat tgagctattt ctaattttcg gctgctatga ataaagctgc 1400

tacaaatatt tttgtacaag actttttgta aacataggag tccctttatt 1450

ttaaataaat aactagtcat atcattaggt ccagtaattg ttgacaggca 1500

ggaacggggg accattgcat tgtgcccaag taataataaa actatttcag 1550

atgtattata tgattgagca aatgagaaaa catgttgatg ttgatgggag 1600

tcaggatgtt cactatggaa aaacaaatat acaaatatga aatgagggaa 1650

ggcaagaaag aaccatgtgg aaatggaata gaattggtat aaattcataa 1700

tttctaaacc atgtatatgt acgtttatat gtattataat tgcatacaca 1750

tgcctccatg catatatgtg tgtgataata cacatgcatt tatgtgcgtg 1800

tgtgtataca catgcatata tttactaatc ctatctgcca aaatggctta 1850

gacacaaaaa cacctcagca gaaatgaata tacctagcac tcagatcttc 1900

gtgtctaata tagtttgcca ctaaaaggaa ccaaggctac ttggaaaaat 1950

ggatgattcc aaagcaaggg caaggtagga acaagatgag cttgaaatat 2000

cttgttatgc cagaaagtaa tgttaaaaaa aaaaaataga ggtatattgc 2050

caaaacatag agccagcttg aaggggctcc cactggccaa acttgagcca 2100

atctgagagc aaaataattg agaaaaataa ataacaagat aattgaaaaa 2150

aaataaaata aattcccaat tccattggga aaaaatagaa atccatgaat 2200

ccatactgat ataatgatag ataatcgata gataggtaga tgactgacag 2250

atgatagata gatatataga tagatagata gatagataga tagatagata 2300

gatagataga gaaatgagaa ggtttctctt ttgcaataga acgtcatgga 2350

ccagtgttaa atgtgagtgg aaggagttct ggaattggaa aaccatcatt 2400

tttcaaccat cacagtaaat atggctcagg caagaattat caatcaatgc 2450

taaagctagg gggaaatttc gcttaggagc aggatattag ggtattagtc 2500

tgggcttaaa gtatctcctc acagattgtt gttagtttct ggggaaagaa 2550

tagtaaccat gcaatggaaa aaaatggaca acctcttgac taggttatca 2600

aaattaacct caccaataaa gggtggatgt tcaacatgtg ccttcaaatg 2650

tgacccactg agaaggaaac aacatcactg taacaacaac aaccagaaac 2700

gacagggggt tttgactgaa ttcttcaaaa atgtcaatgt catagaagac 2750
```

48

```
aaagaaaggt tgtggaaatg tttcagatta aatgatagta aaaacacctg 2800

acaactaaac atagtaagta atactagact ggattctgta ccagaggtaa 2850

cataagtgct ccaaaggaca atgttaggtc aactggcaaa ttggaatata 2900

gacagtcaat cagataagaa gtatactttg attaagtaaa aaaaatccct 2950

attcttggaa aatacacaat aaagtatttt gaggtaaagg gccataatgt 3000

atgcaatcta ctctcaaaaa attcagaaac atatatttgt gtgcatttgc 3050

atgtgcaaca gtacacacaa acatacataa agagagcaat tgataaggca 3100

aataaggtaa catttaacaa taatctgata cacataaata gagaaagagc 3150

aattgataaa gtaaatgagg taaaatttaa caataatctg agcaaaaggt 3200

atatgtgttt tctttgagac agtctgattc ttgcaactta ttctgtaagt 3250

tggaacttat ttccaaacat gattgaaaaa aaaccccgca cttggcaact 3300

tcttctcttt ttcagcctag aaatgtctgt gttaagtggt tttttattta 3350

ttgttgttgt ttgttgttat tgttgttttg ttgccaggct ccaactcaca 3400

aaatacgagt ttaaaaactg cgttgttatt tttagagatt tgtgataata 3450

caacttgtta taaaatttat tcctcaataa atataatttc tctactatgc 3500

aaaaaaaaaa aaaaa 3515
```

<210> 27
<211> 1879
<212> DNA
<213> Homo sapien

<400> 27

```
cagccccgcg cgccggccga gtcgctgagc cgcggctgcc ggacgggacg 50

ggaccggcta ggctgggcgc gcccccceggg ccccgccgtg ggcatgggcg 100

cactggcccg ggcgctgctg ctgcctctgc tggcccagtg gctcctgcgc 150

gccgccccgg agctggcccc cgcgcccttc acgctgcccc tccgggtggc 200

cgcggccacg aaccgcgtag ttgcgcccac cccgggaccc gggaccccctg 250

ccgagcgcca cgccgacggc ttggcgctcg ccctggagcc tgccctggcg 300

tccccccgcgg gcgccgccaa cttcttggcc atggtagaca acctgcaggg 350

ggactctggc cgcggctact acctggagat gctgatcggg accccccccgc 400

agaagctaca gattctcgtt gacactggaa gcagtaactt tgccgtggca 450

ggaaccccgc actcctacat agacacgtac tttgacacag agaggtctag 500
```

```
cacataccgc tccaagggct ttgacgtcac agtgaagtac acacaaggaa 550

gctggacggg cttcgttggg gaagacctcg tcaccatccc caaaggcttc 600

aatacttctt ttcttgtcaa cattgccact atttttgaat cagagaattt 650

cttttttgcct gggattaaat ggaatggaat acttggccta gcttatgcca 700

cacttgccaa gccatcaagt tctctggaga ccttcttcga ctccctggtg 750

acacaagcaa acatccccaa cgttttctcc atgcagatgt gtggagccgg 800

cttgcccgtt gctggatctg ggaccaacgg aggtagtctt gtcttgggtg 850

gaattgaacc aagtttgtat aaaggagaca tctggtatac ccctattaag 900

gaagagtggt actaccagat agaaattctg aaattggaaa ttggaggcca 950

aagccttaat ctggactgca gagagtataa cgcagacaag gccatcgtgg 1000

acagtggcac cacgctgctg cgcctgcccc agaaggtgtt tgatgcggtg 1050

gtggaagctg tggcccgcgc atctctgatt ccagaattct ctgatggttt 1100

ctggactggg tcccagctgg cgtgctggac gaattcggaa acaccttggt 1150

cttacttccc taaaatctcc atctacctga gagacgagaa ctccagcagg 1200

tcattccgta tcacaatcct gcctcagctt tacattcagc ccatgatggg 1250

ggccggcctg aattatgaat gttaccgatt cggcatttcc ccatccacaa 1300

atgcgctggt gatcggtgcc acggtgatgg agggcttcta cgtcatcttc 1350

gacagagccc agaagagggt gggcttcgca gcgagcccct gtgcagaaat 1400

tgcaggtgct gcagtgtctg aaatttccgg gcctttctca acagaggatg 1450

tagccagcaa ctgtgtcccc gctcagtctt tgagcgagcc cattttgtgg 1500

attgtgtcct atgcgctcat gagcgtctgt ggagccatcc tccttgtctt 1550

aatcgtcctg ctgctgctgc cgttccggtg tcagcgtcgc ccccgtgacc 1600

ctgaggtcgt caatgatgag tcctctctgg tcagacatcg ctggaaatga 1650

atagccaggc ctgacctcaa gcaaccatga actcagctat taagaaaatc 1700

acatttccag ggcagcagcc gggatcgatg gtggcgcttt ctcctgtgcc 1750

cacccgtctt caatctctgt tctgctccca gatgccttct agattcactg 1800

tcttttgatt cttgattttc aagctttcaa atcctcccta cttccaagaa 1850

aaataattaa aaaaaaaact tcattctaa 1879
```

<210> 28
<211> 1579

50

<212> DNA
<213> Homo sapien

<400> 28
gagagaatag ctacagattc tccatcctca gtctttgcaa ggcgacagct 50

gtgccagccg ggctctggca ggctcctggc agcatggcag tgaagcttgg 100

gaccctcctg ctggcccttg ccctgggcct ggcccagcca gcctctgccc 150

gccggaagct gctggtgttt ctgctggatg gttttcgctc agactacatc 200

agtgatgagg cgctggagtc attgcctggt ttcaaagaga ttgtgagcag 250

gggagtaaaa gtggattact tgactccaga cttccctagt ctctcgtatc 300

ccaattatta taccctaatg actggccgcc attgtgaagt ccatcagatg 350

atcgggaact acatgtggga ccccaccacc aacaagtcct ttgacattgg 400

cgtcaacaaa gacagcctaa tgcctctctg gtggaatgga tcagaacctc 450

tgtgggtcac tctgaccaag gccaaaagga aggtctacat gtactactgg 500

ccaggctgtg aggttgagat tctgggtgtc agacccacct actgcctaga 550

atataaaaat gtcccaacgg atatcaattt tgccaatgca gtcagcgatg 600

ctcttgactc cttcaagagt ggccgggccg acctggcagc catataccat 650

gagcgcattg acgtggaagg ccaccactac gggcctgcat ctccgcagag 700

gaaagatgcc ctcaaggctg tagacactgt cctgaagtac atgaccaagt 750

ggatccagga gcggggcctg caggaccgcc tgaacgtcat tattttctcg 800

gatcacggaa tgaccgacat tttctggatg gacaaagtga ttgagctgaa 850

taagtacatc agcctgaatg acctgcagca agtgaaggac cgcgggcctg 900

ttgtgagcct ttggccggcc cctgggaaac actctgagat atataacaaa 950

ctgagcacag tggaacacat gactgtctac gagaaagaag ccatcccaag 1000

caggttctat tacaagaaag gaaagtttgt ctctcctttg actttagtgg 1050

ctgatgaagg ctggttcata actgagaatc gagagatgct tccgttttgg 1100

atgaacagca ccggcaggcg ggaaggttgg cagcgtggat ggcacggcta 1150

cgacaacgag ctcatggaca tgcggggcat cttcctggcc ttcggacctg 1200

atttcaaatc caacttcaga gctgctccta tcaggtcggt ggacgtctac 1250

aatgtcatgt gcaatgtggt gggcatcacc ccgctgccca caacggatc 1300

ctggtccagg gtgatgtgca tgctgaaggg ccgcgccggc actgccccgc 1350

51

```
ctgtctggcc cagccactgt gccctggcac tgattcttct cttcctgctt 1400

gcataactga tcatattgct tgtctcagaa aaaaacacca tcagcaaagt 1450

gggcctccaa agccagatga ttttcatttt atgtgtgaat aatagcttca 1500

ttaacacaat caagaccatg cacattgtaa atacattatt cttggataat 1550

tctatacata aaagttccta cttgttaaa 1579
```

<210> 29
<211> 471
<212> DNA
<213> Homo sapien

<400> 29
```
gcatttttgt ctgtgctccc tgatcttcag gtcaccacca tgaagttctt 50

agcagtcctg gtactcttgg gagtttccat ctttctggtc tctgcccaga 100

atccgacaac agctgctcca gctgacacgt atccagctac tggtcctgct 150

gatgatgaag cccctgatgc tgaaaccact gctgctgcaa ccactgcgac 200

cactgctgct cctaccactg caaccaccgc tgcttctacc actgctcgta 250

aagacattcc agttttaccc aaatgggttg gggatctccc gaatggtaga 300

gtgtgtccct gagatggaat cagcttgagt cttctgcaat tggtcacaac 350

tattcatgct tcctgtgatt tcatccaact acttaccttg cctacgatat 400

cccctttatc tctaatcagt ttattttctt tcaaataaaa aataactatg 450

agcaacataa aaaaaaaaa a 471
```

<210> 30
<211> 1021
<212> DNA
<213> Homo sapien

<400> 30
```
gactacgggg agagagagga gaccaggaca gctgctgaga cctctaagaa 50

gtccagatac taagagcaaa gatgtttcaa actgggggcc tcattgtctt 100

ctacgggctg ttagcccaga ccatggccca gtttggaggc ctgcccgtgc 150

ccctggacca gaccctgccc ttgaatgtga atccagccct gcccttgagt 200

cccacaggtc ttgcaggaag cttgacaaat gccctcagca atggcctgct 250

gtctgggggc ctgttgggca ttctggaaaa ccttccgctc ctggacatcc 300

tgaagcctgg aggaggtact tctggtggcc tccttggggg actgcttgga 350

aaagtgacgt cagtgattcc tggcctgaac aacatcattg acataaaggt 400
```

52

```
cactgacccc cagctgctgg aacttggcct tgtgcagagc cctgatggcc 450

accgtctcta tgtcaccatc cctctcggca taaagctcca agtgaatacg 500

cccctggtcg gtgcaagtct gttgaggctg gctgtgaagc tggacatcac 550

tgcagaaatc ttagctgtga gagataagca ggagaggatc cacctggtcc 600

ttggtgactg cacccattcc cctggaagcc tgcaaatttc tctgcttgat 650

ggacttggcc ccctccccat tcaaggtctt ctggacagcc tcacagggat 700

cttgaataaa gtcctgcctg agttggttca gggcaacgtg tgccctctgg 750

tcaatgaggt tctcagaggc ttggacatca ccctggtgca tgacattgtt 800

aacatgctga tccacggact acagtttgtc atcaaggtct aagccttcca 850

ggaaggggct ggcctctgct gagctgcttc ccagtgctca cagatggctg 900

gcccatgtgc tggaagatga cacagttgcc ttctctccga ggaacctgcc 950

ccctctcctt tcccaccagg cgtgtgtaac atcccatgtg cctcacctaa 1000

taaaatggct cttcttatgc a 1021
```

<210> 31
<211> 2868
<212> DNA
<213> Homo sapien

<400> 31
```
 gggcgctggg agacaccgga cgcccgctcg gctgcgctgc ggctcaggcc 50

 cccgctcggg cccgacccgc tcggtcaccg ccggctcggg cgcgcacctg 100

 ccggctgcgg ccccagggcc atgcggaggc ccacgaggag gccggcggcc 150

 acgcgcatcc cgtagcccag gtggcccagg tctgcaccgc ggcggcctcg 200

 gcgccatgga gcccccgtat tcgctgacgg cgcactacga tgagttccaa 250

 gaggtcaagt acgtgagccg ctgcggcgcg gggggcgcgc gcggggcctc 300

 cctgcccccg ggcttcccgt tgggcgctgc gcgcagcgtc accggggccc 350

 ggtccgggct gccgcgctgg aaccggcgcg aggtgtgcct gctgtcgggg 400

 ctggtgttcg ccgccggcct ctgcgccatt ctggcggcta tgctggccct 450

 caagtacctg ggcccggtcg cggccggcgg cggcgcctgt cccgagggct 500

 gccctgagcg caaggccttc gcgcgcgccg ctcgcttcct ggccgccaac 550

 ctggacgcca gcatcgaccc atgccaggac ttctactcgt tcgcctgcgg 600

 cggttggctg cggcgccacg ccatccccga cgacaagctc acctatggca 650
```

```
ccatcgcggc catcggcgag caaaacgagg agcgcctacg gcgcctgctg 700

gcgcggcccg ggggtgggcc tggcggcgcg gcccagcgca aggtgcgcgc 750

cttcttccgc tcgtgcctcg acatgcgcga gatcgagcga ctgggcccgc 800

gacccatgct agaggtcatc gaggactgcg ggggctggga cctgggcggc 850

gcggaggagc gtccgggggt cgcggcgcga tgggacctca accggctgct 900

gtacaaggcg cagggcgtgt acagcgccgc cgcgctcttc tcgctcacgg 950

tcagcctgga cgacaggaac tcctcgcgct acgtcatccg cattgaccag 1000

gatgggctca ccctgccaga gaggaccctg tacctcgctc aggatgagga 1050

cagtgagaag atcctggcag catacagggt gttcatggag cgagtgctca 1100

gcctcctggg tgcagacgct gtggaacaga aggcccaaga gatcctgcaa 1150

gtggagcagc agctggccaa catcactgtg tcagagtatg acgacctacg 1200

gcgagatgtc agctccatgt acaacaaggt gacgctgggg cagctgcaga 1250

agatcacccc ccacttgcgg tggaagtggc tgctagacca gatcttccag 1300

gaggacttct cagaggaaga ggaggtggtg ctgctggcga cagactacat 1350

gcagcaggtg tcgcagctca tccgctccac accccaccgg gtcctgcaca 1400

actacctggt gtggcgcgtg gtggtggtcc tgagtgaaca cctgtccccg 1450

ccattccgtg aggcactgca cgagctggca caggagatgg agggcagcga 1500

caagccacag gagctggccc gggtctgctt gggccaggcc aatcgccact 1550

ttggcatggc gcttggcgcc ctctttgtac atgagcactt ctcagccgcc 1600

agcaaagcca aggtgcagca gctagtggaa gacatcaagt acatcctggg 1650

ccagcgcctg gaggagctgg actggatgga cgccgagacc agggctgctg 1700

ctcgggccaa gctccagtac atgatggtga tggtcggcta cccggacttc 1750

ctgctgaaac ccgatgctgt ggacaaggag tatgagtttg aggtccatga 1800

gaagacctac ttcaagaaca tcttgaacag catccccttc agcatccagc 1850

tctcagttaa gaagattcgg caggaggtgg acaagtccac gtggctgctc 1900

cccccacagg cgctcaatgc ctactatcta cccaacaaga accagatggt 1950

gttccccgcg ggcatcctgc agcccaccct gtacgaccct gacttcccac 2000

agtctctcaa ctacggggc atcggcacca tcattggaca tgagctgacc 2050

cacggctacg acgactgggg gggccagtat gaccgctcag ggaacctgct 2100
```

gcactggtgg acggaggcct cctacagccg cttcctgcga aaggctgagt 2150

gcatcgtccg tctctatgac aacttcactg tctacaacca gcgggtgaac 2200

gggaaacaca cgcttgggga gaacatcgca gatatgggcg tcctcaagct 2250

ggcctaccac gcctatcaga agtgggtgcg ggagcacggc ccagagcacc 2300

cacttccccg gctcaagtac acacatgacc agctcttctt cattgccttt 2350

gcccagaact ggtgcatcaa gcggcggtcg cagtccatct acctgcaggt 2400

gctgactgac aagcatgccc ctgagcacta cagggtgctg ggcagtgtgt 2450

cccagtttga ggagtttggc cgggctttcc actgtcccaa ggactcaccc 2500

atgaaccctg cccacaagtg ttccgtgtgg tgagcctggc tgcccgcctg 2550

cacgcccca ctgcccccgc acgaatcacc tcctgctggc taccggggca 2600

ggcatgcacc cggtgccagc cccgctctgg gcaccacctg ccttccagcc 2650

cctccaggac ccggtccccc tgctgcccct cacttcagga ggggcctgga 2700

gcagggtgag gctggacttt ggggggctgt gagggaaata tactggggtc 2750

cccagattct gctctaaggg ggccagaccc tctgccaggc tggattgtac 2800

gggcccccacc ttcgctgtgt tcttgctgca aagtctggtc aataaatcac 2850

tgcactgtta aaaaaaaa 2868

<210> 32
<211> 2664
<212> DNA
<213> Homo sapien

<400> 32
gagagaacag cgtgagcctg tgtgcttgtg tgctgagccc tcatcccctc 50

ctggggccag gcttgggttt cacctgcaga atcgcttgtg ctgggctgcc 100

tgggctgtcc tcagtggcac ctgcatgaag ccgttctggc tgccagagct 150

ggacagcccc aggaaaaccc acctctctgc agagcttgcc cagctgtccc 200

cgggaagcca aatgcctctc atgtaagtct tctgctcgac ggggtgtctc 250

ctaaaccctc actcttcagc ctctgtttga ccatgaaatg aagtgactga 300

gctctattct gtacctgcca ctctatttct ggggtgactt ttgtcagctg 350

cccagaatct ccaagccagg ctggttctct gcatcctttc aatgacctgt 400

tttcttctgt aaccacaggt tcggtggtga gaggaagcct cgcagaatcc 450

agcagaatcc tcacagaatc cagcagcagc tctgctgggg acatggtcca 500

55

```
tggtgcaacc cacagcaaag ccctgacctg acctcctgat gctcaggaga 550

agccatgggc ccctcctgtc ctgtgttcct gtccttcaca aagctcagcc 600

tgtggtggct ccttctgacc ccagcaggtg gagaggaagc taagcgccca 650

cctcccaggg ctcctggaga cccactctcc tctcccagtc ccacggcatt 700

gccgcaggga ggctcgcata ccgagactga ggaccggctc ttcaaacacc 750

tcttccgggg ctacaaccgc tgggcgcgcc cggtgcccaa cacttcagac 800

gtggtgattg tgcgctttgg actgtccatc gctcagctca tcgatgtgga 850

tgagaagaac caaatgatga ccaccaacgt ctggctaaaa caggagtgga 900

gcgactacaa actgcgctgg aaccccgctg attttggcaa catcacatct 950

ctcagggtcc cttctgagat gatctggatc cccgacattg ttctctacaa 1000

caatgcagat ggggagtttg cagtgaccca catgaccaag gcccacctct 1050

tctccacggg cactgtgcac tgggtgcccc cggccatcta caagagctcc 1100

tgcagcatcg acgtcacctt cttccccttc gaccagcaga actgcaagat 1150

gaagtttggc tcctggactt atgacaaggc caagatcgac ctggagcaga 1200

tggagcagac tgtggacctg aaggactact gggagagcgg cgagtgggcc 1250

atcgtcaatg ccacgggcac ctacaacagc aagaagtacg actgctgcgc 1300

cgagatctac cccgacgtca cctacgcctt cgtcatccgg cggctgccgc 1350

tcttctacac catcaacctc atcatcccct gcctgctcat ctcctgcctc 1400

actgtgctgg tcttctacct gcccctccgac tgcggcgaga agatcacgct 1450

gtgcatttcg gtgctgctgt cactcaccgt cttcctgctg ctcatcactg 1500

agatcatccc gtccacctcg ctggtcatcc cgctcatcgg cgagtacctg 1550

ctgttcacca tgatcttcgt caccctgtcc atcgtcatca ccgtcttcgt 1600

gctcaatgtg caccaccgct cccccagcac ccacaccatg ccccactggg 1650

tgcgggggc ccttctgggc tgtgtgcccc ggtggcttct gatgaaccgg 1700

cccccaccac ccgtggagct ctgccacccc ctacgcctga agctcagccc 1750

ctcttatcac tggctggaga gcaacgtgga tgccgaggag agggaggtgg 1800

tggtggagga ggaggacaga tgggcatgtg caggtcatgt ggccccctct 1850

gtgggcaccc tctgcagcca cggccacctg cactctgggg cctcaggtcc 1900

caaggctgag gctctgctgc aggagggtga gctgctgcta tcaccccaca 1950
```

56

```
tgcagaaggc actggaaggt gtgcactaca ttgccgacca cctgcggtct 2000

gaggatgctg actcttcggt gaaggaggac tggaagtatg ttgccatggt 2050

catcgacagg atcttcctct ggctgtttat catcgtctgc ttcctgggga 2100

ccatcggcct ctttctgcct ccgttcctag ctggaatgat ctgactgcac 2150

ctccctcgag ctggctccca gggcaaaggg gagggttctt ggatgtggaa 2200

gggctttgaa caatgtttag atttggagat gagcccaaag tgccagggag 2250

aacagccagg tgaggtggga ggttggagag ccaggtgagg tctctctaag 2300

tcaggctggg gttgaagttt ggagtctgtc cgagtttgca gggtgctgag 2350

ctgtatggtc cagcagggga gtaataaggg ctcttccgga aggggaggaa 2400

gcgggaggca ggcctgcacc tgatgtggag gtacaggcag atcttcccta 2450

ccggggaggg atggatggtt ggatacaggt ggctgggcta ttccatccat 2500

ctggaagcac atttgagcct ccaggcttct ccttgacgtc attcctctcc 2550

ttccttgctg caaaatggct ctgcaccagc cggcccccag gaggtctggc 2600

agagctgaga gccatggcct gcaggggctc catatgtccc tacgcgtgca 2650

gcaggcaaac aaga 2664
```

<210> 33
<211> 887
<212> DNA
<213> Homo sapien

<400> 33
```
ctctgtcctg ggacttggtg gtgctaccct tggcctccca cagtcctgcc 50

accctgctgc cgccaccatg ctgccccctg ggactgcgac cctcttgact 100

ctgctcctgg cagctggctc gctgggccag aagcctcaga ggccacgccg 150

gcccgcatcc cccatcagca ccatccagcc caaggccaat tttgatgctc 200

agcagtttgc agggacctgg ctccttgtgg ctgtgggctc cgcttgccgt 250

ttcctgcagg agcagggcca ccgggccgag gccaccacac tgcatgtggc 300

tccccagggc acagccatgg ctgtcagtac cttccgaaag ctggatggga 350

tctgctggca ggtgcgccag ctctatggag acacaggggt cctcggccgc 400

ttcctgcttc aagcccgagg cgcccgaggg gctgtgaacg tggttgtcgc 450

tgagactgac taccagagtt tcgctgtcct gtacctggag cgggcggggc 500

agctgtcagt gaagctctac gcccgctcgc tccctgtgag cgactcggtc 550
```

57

```
ctgagtgggt ttgagcagcg ggtccaggag gcccacctga ctgaggacca 600

gatcttctac ttcccccaagt acggcttctg cgaggctgca gaccagttcc 650

acgtcctgga cgaagtgagg aggtgaggcc ggcacacagc tccagtgctg 700

agaagtcagt gccccgagag acgaccccac cagtggggtg cccgctgcct 750

gtcctccgtg aaaccagcct cagatcaggg ccctgccacc cagggcaggg 800

gatcttctgc cggctgcccc agaggacagt gggtggagtg gtacctactt 850

attaaatgtc tcagacccca aaaaaaaaaa aaaaaaa 887
```

<210> 34
<211> 1109
<212> DNA
<213> Homo sapien

<400> 34
```
aagaacaatt gtctctggac ggcagctatg cgactcaccg tgctgtgtgc 50

tgtgtgcctg ctgcctggca gcctggccct gccgctgcct caggaggcgg 100

gaggcatgag tgagctacag tgggaacagg ctcaggacta tctcaagaga 150

ttttatctct atgactcaga aacaaaaaat gccaacagtt tagaagccaa 200

actcaaggag atgcaaaaat tctttggcct acctataact ggaatgttaa 250

actcccgcgt catagaaata atgcagaagc ccagatgtgg agtgccagat 300

gttgcagaat actcactatt tccaaatagc ccaaaatgga cttccaaagt 350

ggtcacctac aggatcgtat catatactcg agacttaccg catattacag 400

tggatcgatt agtgtcaaag gctttaaaca tgtggggcaa agagatcccc 450

ctgcatttca ggaaagttgt atggggaact gctgacatca tgattggctt 500

tgcgcgagga gctcatgggg actcctaccc atttgatggg ccaggaaaca 550

cgctggctca tgcctttgcg cctgggacag gtctcggagg agatgctcac 600

ttcgatgagg atgaacgctg gacggatggt agcagtctag ggattaactt 650

cctgtatgct gcaactcatg aacttggcca ttctttgggt atgggacatt 700

cctctgatcc taatgcagtg atgtatccaa cctatggaaa tggagatccc 750

caaaatttta aactttccca ggatgatatt aaaggcattc agaaactata 800

tggaaagaga agtaattcaa gaaagaaata gaaacttcag gcagaacatc 850

cattcattca ttcattggat tgtatatcat tgttgcacaa tcagaattga 900

taagcactgt tcctccactc catttagcaa ttatgtcacc cttttttatt 950
```

58

```
gcagttggtt tttgaatgtc tttcactcct tttattggtt aaactccttt 1000

atggtgtgac tgtgtcttat tccatctatg agctttgtca gtgcgcgtag 1050

atgtcaataa atgttacata cacaaataaa taaaatattt aggccatggt 1100

aaatttacc 1109
```

<210> 35
<211> 1504
<212> DNA
<213> Homo sapien

<400> 35
```
gagcgagcac cttcgacgcg gtccggggac cccctcgtcg ctgtcctccc 50

gacgcggacc cgcgtgcccc aggcctcgcg ctgcccggcc ggctcctcgt 100

gtcccactcc cggcgcacgc cctcccgcgc ccctcttctc ggcgcgcgcg 150

cagcatggcg cccccgcagg tcctcgcgtt cgggcttctg cttgccgcgg 200

cgacggcgac ttttgccgca gctcaggaag aatgtgtctg tgaaaactac 250

aagctggccg taaactgctt tgtgaataat aatcgtcaat gccagtgtac 300

ttcagttggt gcacaaaata ctgtcatttg ctcaaagctg gctgccaaat 350

gtttggtgat gaaggcagaa atgaatggct caaaacttgg gagaagagca 400

aaacctgaag gggccctcca gaacaatgat gggctttatg atcctgactg 450

cgatgagagc gggctcttta aggccaagca gtgcaacggc acctccacgt 500

gctggtgtgt gaacactgct ggggtcagaa gaacagacaa ggacactgaa 550

ataacctgct ctgagcgagt gagaacctac tggatcatca ttgaactaaa 600

acacaaagca agagaaaaac cttatgatag taaaagtttg cggactgcac 650

ttcagaagga gatcacaacg cgttatcaac tggatccaaa atttatcacg 700

agtattttgt atgagaataa tgttatcact attgatctgg ttcaaaattc 750

ttctcaaaaa actcagaatg atgtggacat agctgatgtg gcttattatt 800

ttgaaaaaga tgttaaaggt gaatccttgt ttcattctaa gaaaatggac 850

ctgacagtaa atggggaaca actggatctg gatcctggtc aaactttaat 900

ttattatgtt gatgaaaaag cacctgaatt ctcaatgcag ggtctaaaag 950

ctggtgttat tgctgttatt gtggttgtgg tgatggcagt tgttgctgga 1000

attgttgtgc tggttatttc cagaaagaag agaatggcaa agtatgagaa 1050

ggctgagata aaggagatgg gtgagatgca tagggaactc aatgcataac 1100
```

```
tatataattt gaagattata gaagaaggga aatagcaaat ggacacaaat 1150

tacaaatgtg tgtgcgtggg acgaagacat ctttgaaggt catgagtttg 1200

ttagtttaac atcatatatt tgtaatagtg aaacctgtac tcaaaatata 1250

agcagcttga aactggcttt accaatcttg aaatttgacc acaagtgtct 1300

tatatatgca gatctaatgt aaaatccaga acttggactc catcgttaaa 1350

attatttatg tgtaacattc aaatgtgtgc attaaatatg cttccacagt 1400

aaaatctgaa aaactgattt gtgattgaaa gctgcctttc tatttacttg 1450

agtcttgtac atacatactt ttttatgagc tatgaaataa aacattttaa 1500

actg 1504
```

<210> 36
<211> 777
<212> DNA
<213> Homo sapien

<400> 36
```
gctccgggct gaagattgct tctcttctct cctccaaggt ctagtgacgg 50

agcccgcgcg cgcgccacca tgcggcagaa ggcggtatcc gttttcttgt 100

gctacctgct gctcttcact tgcagtgggg tggaggcagg taagaaaaag 150

tgctcggaga gctcggacag cggctccggg ttctggaagg ccctgacctt 200

catggccgtc ggaggaggac tcgcagtcgc cgggctgccc gcgctgggct 250

tcaccggcgc cggcatcgcg gccaactcgg tggctgcctc gctgatgagc 300

tggtctgcga tcctgaatgg gggcggcgtg cccgccgggg ggctagtggc 350

cacgctgcag agcctcgggg ctggtggcag cagcgtcgtc ataggtaata 400

ttggtgccct gatgcggtac gccacccaca agtatctcga tagtgaggag 450

gatgaggagt agccagcagc tcccagaacc tcttcttcct tcttggccta 500

actcttccag ttaggatcta gaactttgcc tttttttttt tttttttttt 550

tttgagatgg gttctcacta tattgtccag gctagagtgc agtggctatt 600

cacagatgcg aacatagtac actgcagcct ccaactccta gcctcaagtg 650

atcctcctgt ctcaacctcc caagtaggat tacaagcatg cgccgacgat 700

gcccagaatc cagaactttg tctatcactc tccccaacaa cctagatgtg 750

aaaacagaat aaacttcacc cagaaaa 777
```

<210> 37
<211> 3416
```

<212> DNA
<213> Homo sapien

<400> 37
```
gccgccgagg gcagccagcc cctcccctac ccggagcagc ccgctggggc 50

cgtcccgagc ggcgacacac taggagtccc ggccggccag ccagggcagc 100

cgcggtcccg ggactcggcc gtgagtgctg cgggacggat ggtggcggcg 150

ggagcgcgga gaccacggcg ggcgccgtgg agccgggcgc cgtgcagccg 200

gagctgcgcg cggggcatgc ggctgcgccc cggcccctcg gcccccggcc 250

tcggcccccg cgctccggcc ccagccccgg ccgccggccc ccgcggagtg 300

cagcgaccgc gccgccgctg agggaggcgc cccaccatgc cgcgggcccc 350

ggcgccgctg tacgcctgcc tcctggggct ctgcgcgctc ctgccccggc 400

tcgcaggtct caacatatgc actagtggaa gtgccacctc atgtgaagaa 450

tgtctgctaa tccacccaaa atgtgcctgg tgctccaaag aggacttcgg 500

aagcccacgg tccatcacct ctcggtgtga tctgagggca aaccttgtca 550

aaaatggctg tggaggtgag atagagagcc cagccagcag cttccatgtc 600

ctgaggagcc tgcccctcag cagcaagggt tcgggctctg caggctggga 650

cgtcattcag atgacaccac aggagattgc cgtgaacctc cggcccggtg 700

acaagaccac cttccagcta caggttcgcc aggtggagga ctatcctgtg 750

gacctgtact acctgatgga cctctccctg tccatgaagg atgacttgga 800

caatatccgg agcctgggca ccaaactcgc ggaggagatg aggaagctca 850

ccagcaactt ccggttggga tttgggtctt ttgttgataa ggacatctct 900

cctttctcct acacggcacc gaggtaccag accaatccgt gcattggtta 950

caagttgttt ccaaattgcg tcccctcctt tgggttccgc catctgctgc 1000

ctctcacaga cagagtggac agcttcaatg aggaagttcg gaaacagagg 1050

gtgtcccgga accgagatgc ccctgagggg ggctttgatg cagtactcca 1100

ggcagccgtc tgcaaggaga agattggctg gcgaaaggat gcactgcatt 1150

tgctggtgtt cacaacagat gatgtgcccc acatcgcatt ggatggaaaa 1200

ttgggaggcc tggtgcagcc acacgatggc cagtgccacc tgaacgaggc 1250

caacgagtac acagcatcca accagatgga ctatccatcc cttgccttgc 1300

ttggagagaa attggcagag aacaacatca acctcatctt tgcagtgaca 1350
```

61

```
aaaaaccatt atatgctgta caagaatttt acagccctga tacctggaac 1400

aacggtggag atttttagatg gagactccaa aaatattatt caactgatta 1450

ttaatgcata caatagtatc cggtctaaag tggagttgtc agtctgggat 1500

cagcctgagg atcttaatct cttctttact gctacctgcc aagatggggt 1550

atcctatcct ggtcagagga agtgtgaggg tctgaagatt ggggacacgg 1600

catcttttga agtatcattg gaggcccgaa gctgtcccag cagacacacg 1650

gagcatgtgt ttgccctgcg gccggtggga ttccgggaca gcctggaggt 1700

gggggtcacc tacaactgca cgtgcggctg cagcgtgggg ctggaaccca 1750

acagcgccag gtgcaacggg agcgggacct atgtctgcgg cctgtgtgag 1800

tgcagccccg gctacctggg caccaggtgc gagtgccagg atggggagaa 1850

ccagagcgtg taccagaacc tgtgccggga ggcagagggc aagccactgt 1900

gcagcgggcg tggggactgc agctgcaacc agtgctcctg cttcgagagc 1950

gagtttggca agatctatgg gcctttctgt gagtgcgaca acttctcctg 2000

tgccaggaac aagggagtcc tctgctcagg ccatggcgag tgtcactgcg 2050

gggaatgcaa gtgccatgca ggttacatcg gggacaactg taactgctcg 2100

acagacatca gcacatgccg gggcagagat ggccagatct gcagcgagcg 2150

tgggcactgt ctctgtgggc agtgccaatg cacggagccg ggggcctttg 2200

gggagatgtg tgagaagtgc cccacctgcc cggatgcatg cagcaccaag 2250

agagattgcg tcgagtgcct gctgctccac tctgggaaac ctgacaacca 2300

gacctgccac agcctatgca gggatgaggt gatcacatgg gtggacacca 2350

tcgtgaaaga tgaccaggag gctgtgctat gtttctacaa aaccgccaag 2400

gactgcgtca tgatgttcac ctatgtggag ctccccagtg ggaagtccaa 2450

cctgaccgtc ctcagggagc cagagtgtgg aaacaccccc aacgccatga 2500

ccatcctcct ggctgtggtc ggtagcatcc tccttgttgg gcttgcactc 2550

ctggctatct ggaagctgct tgtcaccatc cacgaccgga gggagtttgc 2600

aaagtttcag agcgagcgat ccagggcccg ctatgaaatg gcttcaaatc 2650

cattatacag aaagcctatc tccacgcaca ctgtggactt caccttcaac 2700

aagttcaaca aatcctacaa tggcactgtg gactgatgtt tccttctccg 2750

aggggctgga gcggggatct gatgaaaagg tcagactgaa acgccttgca 2800
```

62

```
cggctgctcg gcttgatcac agctccctag gtaggcacca cagagaagac 2850

cttctagtga gcctgggcca ggagcccaca gtgctgtaca acaagggaaa 2900

ggtagcctgg ccatgtcacc tggctgctag ccagagccat gccaggttcg 2950

cgtccctaag agcttgggat aaagcaaggg gaccttggcg ctctcagctt 3000

tccctgccac atccagcttg ttgtcccaat gaaatactga gatgctgggc 3050

tgtctctccc ttccaggaat cgtgggcccc cagcctggcc agacaagaag 3100

actgtcagga agggtcggag tctgtaaaac cagcatacag tttggctttt 3150

ttcacattga tcatttttat atgaaataaa aagatcctgc atttatggtg 3200

tagttctgag tcctgagact tttctgcgtg atgctatgcc ttgcacacag 3250

gtgttggtga tggggctgtt gagatgcctg ttgaaggtac atcgtttgca 3300

aatgtcagtt tcctctcctg tccgtgtttg tttagtactt ttataatgaa 3350

aagaaacaag attgtttggg attggaagta aagattaaaa ccaaaagaat 3400

ttgtgtttgt ctgccc 3416
```

<210> 38
<211> 2148
<212> DNA
<213> Homo sapien

<400> 38
```
cgactcacta tagggcgaat tgaatttagc ggccgcgaat tcgcccttat 50

gctgccacaa ataccctttt tgctgctagt atccttgaac ttggttcatg 100

gagtgtttta cgctgaacga taccaaatgc ccacaggcat aaaaggccca 150

ctacccaaca ccaagacaca gttcttcatt ccctacacca taaagagtaa 200

aggtatagca gtaagaggag agcaaggtac tcctggtcca ccaggccctg 250

ctggacctcg agggcaccca ggtccttctg gaccaccagg aaaaccaggc 300

tacggaagtc ctggactcca aggagagcca gggttgccag gaccaccggg 350

accatcagct gtagggaaac caggtgtgcc aggactccca ggaaaaccag 400

gagagagagg accatatgga ccaaaaggag atgttggacc agctggccta 450

ccaggacccc ggggcccacc aggaccacct ggaatccctg gaccggctgg 500

aatttctgtg ccaggaaaac ctggacaaca gggacccaca ggagccccag 550

gacccagggg ctttcctgga gaaaagggtg caccaggagt ccctggtatg 600

aatggacaga aaggggaaat gggatatggt gctcctggtc gtccaggtga 650
```
```

63
```

```
gaggggtctt ccaggccctc agggtcccac aggaccatct ggccctcctg 700

gagtgggaaa aagaggtgaa aatggggttc caggacagcc aggcatcaaa 750

ggtgatagag gttttccggg agaaatggga ccaattggcc caccaggtcc 800

ccaaggccct cctggggaac gagggccaga aggcattgga aagccaggag 850

ctgctggagc cccaggccag ccagggattc caggaacaaa aggtctccct 900

ggggctccag gaatagctgg gcccccaggg cctcctggct ttgggaaacc 950

aggcttgcca ggcctgaagg gagaaagagg acctgctggc cttcctgggg 1000

gtccaggtgc caaaggggaa caagggccag caggtcttcc tgggaagcca 1050

ggtctgactg gaccccctgg gaatatggga ccccaaggac caaaaggcat 1100

cccgggtagc catggtctcc caggccctaa aggtgagaca gggccagctg 1150

ggcctgcagg ataccctggg gctaagggtg aaaggggttc ccctgggtca 1200

gatggaaaac cagggtaccc aggaaaacca ggtctcgatg gtcctaaggg 1250

taacccaggg ttaccaggtc caaaaggtga tcctggagtt ggaggacctc 1300

ctggtctccc aggccctgtg ggcccagcag gagcaaaggg aatgcccgga 1350

cacaatggag aggctggccc aagaggtgcc cctggaatac caggtactag 1400

aggccctatt gggccaccag gcattccagg attccctggg tctaaagggg 1450

atccaggaag tcccggtcct cctggcccag ctggcatagc aactaagggc 1500

ctcaatggac ccaccgggcc accagggcct ccaggtccaa gaggccactc 1550

tggagagcct ggtcttccag ggccccctgg gcctccaggc ccaccaggtc 1600

aagcagtcat gcctgagggt tttataaagg caggccaaag gcccagtctt 1650

tctgggaccc ctcttgttag tgccaaccag ggggtaacag gaatgcctgt 1700

gtctgctttt actgttattc tctccaaagc ttacccagca ataggaactc 1750

ccataccatt tgataaaatt ttgtataaca ggcaacagca ttatgaccca 1800

aggactggaa tctttacttg tcagatacca ggaatatact atttttcata 1850

ccacgtgcat gtgaaaggga ctcatgtttg ggtaggcctg tataagaatg 1900

gcacccctgt aatgtacacc tatgatgaat acaccaaagg ctacctggat 1950

caggcttcag ggagtgccat catcgatctc acagaaaatg accaggtgtg 2000

gctccagctt cccaatgccg agtcaaatgg cctatactcc tctgagtatg 2050

tccactcctc tttctcagga ttcctagtgg ctccaatgtg agtacaaggg 2100
```

```
cgaattcgtt taaacctgca ggactagtcc ctttagtgag ggttaatt 2148

<210> 39
<211> 1846
<212> DNA
<213> Homo sapien

<400> 39
 gttggtgacc aagagtacat ctctttttcaa atagctggat taggtcctca 50

 tgctgctgtg gtcattgctg gtcatctttg atgcagtcac tgaacaggca 100

 gattcgctga cccttgtggc gccctcttct gtcttcgaag gagacagcat 150

 cgttctgaaa tgccagggag aacagaactg gaaaattcag aagatggctt 200

 accataagga taacaaagag ttatctgttt tcaaaaaatt ctcagatttc 250

 cttatccaaa gtgcagtttt aagtgacagt ggtaactatt tctgtagtac 300

 caaaggacaa ctctttctct gggataaaac ttcaaatata gtaaagataa 350

 aagtccaaga gctctttcaa cgtcctgtgc tgactgccag ctccttccag 400

 cccatcgaag ggggtccagt gagcctgaaa tgtgagaccc ggctctctcc 450

 acagaggttg gatgttcaac tccagttctg cttcttcaga gaaaaccagg 500

 tcctggggtc aggctggagc agctctccgg agctccagat ttctgccgtg 550

 tggagtgaag acacagggtc ttactggtgc aaggcagaaa cggtgactca 600

 caggatcaga aaacagagcc tccaatccca gattcacgtg cagagaatcc 650

 ccatctctaa tgtaagcttg gagatccggg cccccggggg acaggtgact 700

 gaaggacaaa aactgatcct gctctgctca gtggctgggg gtacaggaaa 750

 tgtcacattc tcctggtaca gagaggccac aggaaccagt atgggaaaga 800

 aaacccagcg ttccctgtca gcagagctgg agatcccagc tgtgaaagag 850

 agtgatgccg gcaaatatta ctgtagagct gacaacggcc atgtgcctat 900

 ccagagcaag gtggtgaata tccctgtgag aattccagtg tctcgccctg 950

 tcctcaccct caggtctcct ggggcccagg ctgcagtggg ggacctgctg 1000

 gagcttcact gtgaggccct gagaggctct cccccaatct tgtaccaatt 1050

 ttatcatgag gatgtcaccc ttgggaacag ctcggccccc tctggaggag 1100

 gggcctcctt caacctctct ttgactgcag aacattctgg aaactactcc 1150

 tgtgaggcca acaacggcct gggggcccag tgcagtgagg cagtgccagt 1200

 ctccatctca ggacctgatg gctatagaag agacctcatg acagctggag 1250
```

65

```
ttctctgggg actgtttggt gtccttggtt tcactggtgt tgctttgctg 1300

ttgtatgcct tgttccacaa gatatcagga gaaagttctg ccactaatga 1350

acccagaggg gcttccaggc caaatcctca agagttcacc tattcaagcc 1400

caaccccaga catggaggag ctgcagccag tgtatgtcaa tgtgggctct 1450

gtagatgtgg atgtggttta ttctcaggtc tggagcatgc agcagccaga 1500

aagctcagca aacatcagga cacttctgga gaacaaggac tcccaagtca 1550

tctactcttc tgtgaagaaa tcataacact tggaggaatc agaagggaag 1600

atcaacagca aggatggggc atcattaaga cttgctataa aaccttatga 1650

aaatgcttga ggcttatcac ctgccacagc cagaacgtgc ctcaggaggc 1700

acctcctgtc atttttgtcc tgatgatgtt tcttctccaa tatcttcttt 1750

tacctatcaa tattcattga actgctgcta catccagaca ctgtgcaaat 1800

aaattatttc tgctaccttc aaaaaaaaaa aaaaaaaaaa atgcag 1846
```

<210> 40
<211> 1524
<212> DNA
<213> Homo sapien

<400> 40
```
 ggcacgaggc tgcgccaggg cctgagcgga ggcggggggca gcctcgccag 50

 cggggggcccc gggcctggcc atgcctcact gagccagcgc ctgcgcctct 100

 acctcgccga cagctggaac cagtgcgacc tagtggctct cacctgcttc 150

 ctcctgggcg tgggctgccg gctgaccccg ggtttgtacc acctgggccg 200

 cactgtcctc tgcatcgact tcatggtttt cacggtgcgg ctgcttcaca 250

 tcttcacggt caacaaacag ctggggccca agatcgtcat cgtgagcaag 300

 atgatgaagg acgtgttctt cttcctcttc ttcctcggcg tgtggctggt 350

 agcctatggc gtggccacgg aggggctcct gaggccacgg gacagtgact 400

 tcccaagtat cctgcgccgc gtcttctacc gtccctacct gcagatcttc 450

 gggcagattc cccaggagga catggacgtg gccctcatgg agcacagcaa 500

 ctgctcgtcg gagcccggct tctgggcaca ccctcctggg gcccaggcgg 550

 gcacctgcgt ctcccagtat gccaactggc tggtggtgct gctcctcgtc 600

 atcttcctgc tcgtggccaa catcctgctg gtcaacttgc tcattgccat 650

 gttcagttac acattcggca aagtacaggg caacagcgat ctctactgga 700
```

aggcgcagcg ttaccgcctc atccgggaat tccactctcg gcccgcgctg 750

gccccgccct ttatcgtcat ctcccacttg cgcctcctgc tcaggcaatt 800

gtgcaggcga ccccggagcc cccagccgtc ctccccggcc ctcgagcatt 850

tccgggttta cctttctaag gaagccgagc ggaagctgct aacgtgggaa 900

tcggtgcata aggagaactt tctgctggca cgcgctaggg acaagcggga 950

gagcgactcc gagcgtctga agcgcacgtc ccagaaggtg gacttggcac 1000

tgaaacagct gggacacatc cgcgagtacg aacagcgcct gaaagtgctg 1050

gagcgggagg tccagcagtg tagccgcgtc ctggggtggg tggccgaggc 1100

cctgagccgc tctgccttgc tgcccccagg tgggccgcca cccctgacc 1150

tgcctgggtc caaagactga gccctgctgg cggacttcaa ggagaagccc 1200

ccacagggga ttttgctcct agagtaaggc tcatctgggc ctcggccccc 1250

gcacctggtg gccttgtcct tgaggtgagc cccatgtcca tctgggccac 1300

tgtcaggacc acctttggga gtgtcatcct tacaaaccac agcatgcccg 1350

gctcctccca gaaccagtcc cagcctggga ggatcaaggc ctggatcccg 1400

ggccgttatc catctggagg ctgcagggtc cttggggtaa cagggaccac 1450

agacccctca ccactcacag attcctcaca ctggggaaat aaagccattt 1500

cagaggaaaa aaaaaaaaaa aaaa 1524

<210> 41
<211> 2664
<212> DNA
<213> Homo sapien

<400> 41
gagagaacag cgtgagcctg tgtgcttgtg tgctgagccc tcatcccctc 50

ctggggccag gcttgggttt cacctgcaga atcgcttgtg ctgggctgcc 100

tgggctgtcc tcagtggcac ctgcatgaag ccgttctggc tgccagagct 150

ggacagcccc aggaaaaccc acctctctgc agagcttgcc cagctgtccc 200

cgggaagcca aatgcctctc atgtaagtct tctgctcgac ggggtgtctc 250

ctaaaccctc actcttcagc ctctgtttga ccatgaaatg aagtgactga 300

gctctattct gtacctgcca ctctatttct ggggtgactt ttgtcagctg 350

cccagaatct ccaagccagg ctggttctct gcatcctttc aatgacctgt 400

tttcttctgt aaccacaggt tcggtggtga gaggaagcct cgcagaatcc 450

```
agcagaatcc tcacagaatc cagcagcagc tctgctgggg acatggtcca 500

tggtgcaacc cacagcaaag ccctgacctg acctcctgat gctcaggaga 550

agccatgggc ccctcctgtc ctgtgttcct gtccttcaca aagctcagcc 600

tgtggtggct ccttctgacc ccagcaggtg gagaggaagc taagcgccca 650

cctcccaggg ctcctggaga cccactctcc tctcccagtc ccacggcatt 700

gccgcaggga ggctcgcata ccgagactga ggaccggctc ttcaaacacc 750

tcttccgggg ctacaaccgc tgggcgcgcc cggtgcccaa cacttcagac 800

gtggtgattg tgcgctttgg actgtccatc gctcagctca tcgatgtgga 850

tgagaagaac caaatgatga ccaccaacgt ctggctaaaa caggagtgga 900

gcgactacaa actgcgctgg aaccccgctg attttggcaa catcacatct 950

ctcagggtcc cttctgagat gatctggatc cccgacattg ttctctacaa 1000

caatgcagat ggggagtttg cagtgaccca catgaccaag gcccacctct 1050

tctccacggg cactgtgcac tgggtgcccc cggccatcta caagagctcc 1100

tgcagcatcg acgtcacctt cttccccttc gaccagcaga actgcaagat 1150

gaagtttggc tcctggactt atgacaaggc caagatcgac ctggagcaga 1200

tggagcagac tgtggacctg aaggactact gggagagcgg cgagtgggcc 1250

atcgtcaatg ccacgggcac ctacaacagc aagaagtacg actgctgcgc 1300

cgagatctac cccgacgtca cctacgcctt cgtcatccgg cggctgccgc 1350

tcttctacac catcaacctc atcatcccct gcctgctcat ctcctgcctc 1400

actgtgctgg tcttctacct gccctccgac tgcggcgaga agatcacgct 1450

gtgcatttcg gtgctgctgt cactcaccgt cttcctgctg ctcatcactg 1500

agatcatccc gtccacctcg ctggtcatcc cgctcatcgg cgagtacctg 1550

ctgttcacca tgatcttcgt caccctgtcc atcgtcatca ccgtcttcgt 1600

gctcaatgtg caccaccgct cccccagcac ccacaccatg ccccactggg 1650

tgcgggggggc ccttctgggc tgtgtgcccc ggtggcttct gatgaaccgg 1700

cgcccaccac ccgtggagct ctgccacccc ctacgcctga agctcagccc 1750

ctcttatcac tggctggaga gcaacgtgga tgccgaggag agggaggtgg 1800

tggtggagga ggaggacaga tgggcatgtg caggtcatgt ggccccctct 1850

gtgggcaccc tctgcagcca cggccacctg cactctgggg cctcaggtcc 1900
```

68

caaggctgag gctctgctgc aggagggtga gctgctgcta tcaccccaca 1950

tgcagaaggc actggaaggt gtgcactaca ttgccgacca cctgcggtct 2000

gaggatgctg actcttcggt gaaggaggac tggaagtatg ttgccatggt 2050

catcgacagg atcttcctct ggctgtttat catcgtctgc ttcctgggga 2100

ccatcggcct ctttctgcct ccgttcctag ctggaatgat ctgactgcac 2150

ctccctcgag ctggctccca gggcaaaggg gagggttctt ggatgtggaa 2200

gggctttgaa caatgtttag atttggagat gagcccaaag tgccagggag 2250

aacagccagg tgaggtggga ggttggagag ccaggtgagg tctctctaag 2300

tcaggctggg gttgaagttt ggagtctgtc cgagtttgca gggtgctgag 2350

ctgtatggtc cagcagggga gtaataaggg ctcttccgga aggggaggaa 2400

gcgggaggca ggcctgcacc tgatgtggag gtacaggcag atcttcccta 2450

ccggggaggg atggatggtt ggatacaggt ggctgggcta ttccatccat 2500

ctggaagcac atttgagcct ccaggcttct ccttgacgtc attcctctcc 2550

ttccttgctg caaaatggct ctgcaccagc cggcccccag gaggtctggc 2600

agagctgaga gccatggcct gcaggggctc catatgtccc tacgcgtgca 2650

gcaggcaaac aaga 2664

<210> 42
<211> 1195
<212> DNA
<213> Homo sapien

<400> 42
ccgagactca cggtcaagct aaggcgaaga gtgggtggct gaagccatac 50

tattttatag aattaatgga aagcagaaaa gacatcacaa accaagaaga 100

actttggaaa atgaagccta ggagaaattt agaagaagac gattatttgc 150

ataaggacac gggagagacc agcatgctaa aaagacctgt gcttttgcat 200

ttgcaccaaa cagcccatgc tgatgaattt gactgccctt cagaacttca 250

gcacacacag gaactctttc cacagtggca cttgccaatt aaaatagctg 300

ctattatagc atctctgact tttctttaca ctcttctgag ggaagtaatt 350

caccctttag caacttccca tcaacaatat ttttataaaa ttccaatcct 400

ggtcatcaac aaagtcttgc caatggtttc catcactctc ttggcattgg 450

tttacctgcc aggtgtgata gcagcaattg tccaacttca taatggaacc 500

69

```
aagtataaga agtttccaca ttggttggat aagtggatgt taacaagaaa 550

gcagtttggg cttctcagtt tctttttttgc tgtactgcat gcaatttata 600

gtctgtctta cccaatgagg cgatcctaca gatacaagtt gctaaactgg 650

gcatatcaac aggtccaaca aaataaagaa gatgcctgga ttgagcatga 700

tgtttggaga atggagattt atgtgtctct gggaattgtg ggattggcaa 750

tactggctct gttggctgtg acatctattc catctgtgag tgactctttg 800

acatggagag aatttcacta tattcagagc aagctaggaa ttgtttccct 850

tctactgggc acaatacacg cattgatttt tgcctggaat aagtggatag 900

atataaaaca atttgtatgg tatacacctc caacttttat gatagctgtt 950

ttccttccaa ttgttgtcct gatatttaaa agcatactat tcctgccatg 1000

cttgaggaag aagatactga agattagaca tggttgggaa gacgtcacca 1050

aaattaacaa aactgagata tgttcccagt tgtagaatta ctgtttacac 1100

acatttttgt tcaatattga tatattttat caccaacatt tcaagtttgt 1150

atttgttaat aaaatgatta ttcaaggaaa aaaaaaaaaa aaaaa 1195
```

<210> 43
<211> 4061
<212> DNA
<213> Homo sapien

<400> 43
```
 ggtctggaag cagagccggc ggagggagcg ccggggccct gggctgcagg 50

 aggttgcggc ggccgcggca gcatggtggt gccggagaag gagcagagct 100

 ggatccccaa gatcttcaag aagaagacct gcacgacgtt catagttgac 150

 tccacagatc cgggagggac cttgtgccag tgtgggcgcc cccggaccgc 200

 ccacccccgca gtggccatgg aggatgcctt cggggcagcc gtggtgaccg 250

 tgtgggacag cgatgcacac accacggaga gcccaccga tgcctacgga 300

 gagctggact tcacgggggc cggccgcaag cacagcaatt tcctccggct 350

 ctctgaccga acggatccag ctgcagttta tagtctggtc acacgcacat 400

 ggggcttccg tgccccgaac ctggtggtgt cagtgctggg gggatcgggg 450

 ggccccgtcc tccagacctg gctgcaggac ctgctgcgtc gtgggctggt 500

 gcgggctgcc cagagcacag gagcctggat tgtcactggg ggtctgcaca 550

 cgggcatcgg ccggcatgtt ggtgtggctg tacgggacca tcagatggcc 600
```

```
agcactgggg gcaccaaggt ggtggccatg ggtgtggccc cctggggtgt 650

ggtccggaat agagacaccc tcatcaaccc caagggctcg ttccctgcga 700

ggtaccggtg gcgcggtgac ccggaggacg gggtccagtt tcccctggac 750

tacaactact cggccttctt cctggtggac gacggcacac acggctgcct 800

gggggggcgag aaccgcttcc gcttgcgcct ggagtcctac atctcacagc 850

agaagacggg cgtgggaggg actggaattg acatccctgt cctgctcctc 900

ctgattgatg gtgatgagaa gatgttgacg cgaatagaga acgccaccca 950

ggctcagctc ccatgtctcc tcgtggctgg ctcaggggga gctgcggact 1000

gcctggcgga gaccctggaa gacactctgg ccccagggag tggggagcc 1050

aggcaaggcg aagcccgaga tcgaatcagg cgtttctttc ccaaagggga 1100

ccttgaggtc ctgcaggccc aggtggagag gattatgacc cggaaggagc 1150

tcctgacagt ctattcttct gaggatgggt ctgaggaatt cgagaccata 1200

gttttgaagg cccttgtgaa ggcctgtggg agctcggagg cctcagccta 1250

cctggatgag ctgcgtttgg ctgtggcttg gaaccgcgtg gacattgccc 1300

agagtgaact ctttcggggg gacatccaat ggcggtcctt ccatctcgaa 1350

gcttccctca tggacgccct gctgaatgac cggcctgagt tcgtgcgctt 1400

gctcatttcc cacggcctca gcctgggcca cttcctgacc ccgatgcgcc 1450

tggcccaact ctacagcgcg gcgccctcca actcgctcat ccgcaacctt 1500

ttggaccagg cgtcccacag cgcaggcacc aaagccccag ccctaaaagg 1550

gggagctgcg gagctccggc cccctgacgt ggggcatgtg ctgaggatgc 1600

tgctggggaa gatgtgcgcg ccgaggtacc cctccggggg cgcctgggac 1650

cctcacccag gccagggctt cggggagagc atgtatctgc tctcggacaa 1700

ggccacctcg ccgctctcgc tggatgctgg cctcgggcag gcccctggga 1750

gcgacctgct tctttgggca ctgttgctga acagggcaca gatggccatg 1800

tacttctggg agatggggtt caatgcagtt tcctcagctc ttggggcctg 1850

tttgctgctc cgggtgatgg cacgcctgga gcctgacgct gaggaggcag 1900

cacggaggaa agacctggcg ttcaagtttg aggggatggg cgttgacctc 1950

tttggcgagt gctatcgcag cagtgaggtg agggctgccc gcctcctcct 2000

ccgtcgctgc ccgctctggg gggatgccac ttgcctccag ctggccatgc 2050
```

71

```
aagctgacgc ccgtgccttc tttgcccagg atggggtaca gtctctgctg 2100

acacagaagt ggtgggggaga tatggccagc actacaccca tctgggccct 2150

ggttctcgcc ttcttttgcc ctccactcat ctacacccgc ctcatcacct 2200

tcaggaaatc agaagaggag cccacacggg aggagctaga gtttgacatg 2250

gatagtgtca ttaatgggga agggcctgtc gggacggcgg acccagccga 2300

gaagacgccg ctgggggtcc cgcgccagtc gggccgtccg ggttgctgcg 2350

ggggccgctg cggggggcgc cggtgcctac gccgctggtt ccacttctgg 2400

ggcgcgccgg tgaccatctt catgggcaac gtggtcagct acctgctgtt 2450

cctgctgctt ttctcgcggg tgctgctcgt ggatttccag ccggcgccgc 2500

ccggctccct ggagctgctg ctctatttct gggctttcac gctgctgtgc 2550

gaggaactgc gccagggcct gagcggaggc gggggcagcc tcgccagcgg 2600

gggcccccggg cctggccatg cctcactgag ccagcgcctg cgcctctacc 2650

tcgccgacag ctggaaccag tgcgacctag tggctctcac ctgcttcctc 2700

ctgggcgtgg gctgccggct gaccccgggt ttgtaccacc tgggccgcac 2750

tgtcctctgc atcgacttca tggtttttcac ggtgcggctg cttcacatct 2800

tcacggtcaa caaacagctg gggcccaaga tcgtcatcgt gagcaagatg 2850

atgaaggacg tgttcttctt cctcttcttc ctcggcgtgt ggctggtagc 2900

ctatggcgtg gccacggagg ggctcctgag gccacgggac agtgacttcc 2950

caagtatcct gcgccgcgtc ttctaccgtc cctacctgca gatcttcggg 3000

cagattcccc aggaggacat ggacgtggcc ctcatggagc acagcaactg 3050

ctcgtcggag cccggcttct gggcacaccc tcctggggcc caggcgggca 3100

cctgcgtctc ccagtatgcc aactggctgg tggtgctgct cctcgtcatc 3150

ttcctgctcg tggccaacat cctgctggtc aacttgctca ttgccatgtt 3200

cagttacaca ttcggcaaag tacagggcaa cagcgatctc tactggaagg 3250

cgcagcgtta ccgcctcatc cgggaattcc actctcggcc cgcgctggcc 3300

ccgccctttta tcgtcatctc ccacttgcgc ctcctgctca ggcaattgtg 3350

caggcgaccc cggagccccc agccgtcctc cccggccctc gagcatttcc 3400

gggtttacct ttctaaggaa gccgagcgga agctgctaac gtgggaatcg 3450

gtgcataagg agaactttct gctggcacgc gctagggaca agcgggagag 3500
```

72

```
cgactccgag cgtctgaagc gcacgtccca gaaggtggac ttggcactga 3550

aacagctggg acacatccgc gagtacgaac agcgcctgaa agtgctggag 3600

cgggaggtcc agcagtgtag ccgcgtcctg gggtgggtgg ccgaggccct 3650

gagccgctct gccttgctgc ccccaggtgg gccgccaccc cctgacctgc 3700

ctgggtccaa agactgagcc ctgctggcgg acttcaagga gaagccccca 3750

caggggattt tgctcctaga gtaaggctca tctgggcctc ggcccccgca 3800

cctggtggcc ttgtccttga ggtgagcccc atgtccatct gggccactgt 3850

caggaccacc tttgggagtg tcatccttac aaaccacagc atgcccggct 3900

cctcccagaa ccagtcccag cctgggagga tcaaggcctg atcccgggc 3950

cgttatccat ctggaggctg cagggtcctt ggggtaacag ggaccacaga 4000

cccctcacca ctcacagatt cctcacactg gggaaataaa gccatttcag 4050

aggaaaaaaa a 4061
```

<210> 44
<211> 8035
<212> DNA
<213> Homo sapien

<400> 44
```
cgataattga aaacccagat gtcccacagg atttcgggaa tcaagggtca 50

acagtagagt ccctctgtga tgatgttgtc tctgtactca ccgtcctgtg 100

tgagaagctg caagccgcca taaatgacag ccagcagctg cagcttctct 150

acctggagtg catcctgtct gtgctcagca gctcctcctc ctccatgcac 200

ctgcacaggc gcttcacgga cctgatctgg aaaaacctct gccctgctct 250

catcgtgatc ttggggaatc caattcatga caaaaccatc acctctgctc 300

acaccagcag caccagtacc agcctggagt cggactctgc gtctccggga 350

gtgtctgacc acggccgagg atcaggctgc tcctgcactg cgccggccct 400

gagcggacct gtggctcgga ctatctatta catcgcagcc gagctggtcc 450

ggctggtggg gtctgtggac tccatgaagc ccgtgctcca gtccctctac 500

caccgagtgc tgctctaccc cccaccccag caccgggtgg aagccatcaa 550

aataatgaaa gagatacttg ggagcccaca gcgtctctgt gacttggcag 600

gacccagctc cactgaatca gagtccagaa aaagatcaat ttcaaaaaga 650

aagtctcatc tggatctcct caaactcatc atggatggca tgaccgaagc 700
```

73

```
atgcatcaag ggtggcatcg aagcttgcta tgcagccgtg tcctgtgtct 750

gcaccttgct gggtgccctg gatgagctca gccaggggaa gggcttgagc 800

gaaggtcagg tgcaactgct gcttctgcgc cttgaggagc tgaaggatgg 850

ggctgagtgg agccgagatt ccatggagat caatgaggct gacttccgct 900

ggcagcggcg agtgctgtcc tcagaacaca cgccgtggga gtcagggaac 950

gagaggagcc ttgacatcag catcagtgtc accacagaca caggccagac 1000

cactctcgag ggagagttgg gtcagactac acccgaggac cattcgggaa 1050

accacaagaa cagtctcaag tcgccagcca tcccagaggg taaggagacg 1100

ctgagcaaag tattggaaac agaggcggta gaccagccag atgtcgtgca 1150

gagaagccac acggtccctt accctgacat aactaacttc ctgtcagtag 1200

actgcaggac aaggtcctat ggatctaggt atagtgagag caatttagc 1250

gttgatgacc aagaccttc taggacagag tttgattcct gtgatcagta 1300

ctctatggca gcagaaaagg actcgggcag gtccgacgtg tcagacattg 1350

ggtcggacaa ctgttcacta gccgatgaag agcagacacc ccgggactgc 1400

ctaggccacc ggtccctgcg aactgccgcc ctgtctctaa aactgctgaa 1450

gaaccaggag gcggatcagc acagcgccag gctgttcata cagtccctgg 1500

aaggcctcct ccctcggctc ctgtctctct ccaatgtaga ggaggtggac 1550

accgctctgc agaactttgc ctctactttc tgctcaggca tgatgcactc 1600

tcctggcttt gacgggaata gcagcctcag cttccagatg ctgatgaacg 1650

cagacagcct ctacacagct gcacactgcg ccctgctcct caacctgaag 1700

ctctcccacg gtgactacta caggaagcgg ccgaccctgg cgccaggcgt 1750

gatgaaggac ttcatgaagc aggtgcagac cagcggcgtg ctgatggtct 1800

tctctcaggc ctggattgag gagctctacc atcaggtgct cgacaggaac 1850

atgcttggag aggctggcta ttggggcagc ccagaagata acagccttcc 1900

cctcatcaca atgctgaccg atattgacgg cttagagagc agtgccattg 1950

gtggccagct gatggcctcg gctgctacag agtctccttt cgcccagagc 2000

aggagaattg atgactccac agtggcaggc gtggcatttg ctcgctatat 2050

tctggtgggc tgctggaaga acttgatcga tactttatca accccactga 2100

ctggtcgaat ggcgggggagc tccaaagggc tggccttcat tctgggagct 2150
```

74

```
gaaggcatca aagagcagaa ccagaaggag cgggacgcca tctgcatgag 2200

cctcgacggg ctgcggaaag ccgcacggct gagctgcgct ctaggcgttg 2250

ctgctaactg cgcctcagcc cttgcccaga tggcagctgc ctcctgtgtc 2300

caagaagaaa aagaagagag ggaggcccaa gaacccagtg atgccatcac 2350

acaagtgaaa ctaaaagtgg agcagaaact ggagcagatt gggaaggtgc 2400

aggggtgtg gctgcacact gcccacgtct tgtgcatgga ggccatcctc 2450

agcgtaggcc tggagatggg aagccacaac ccggactgct ggccacacgt 2500

gttcagggtg tgtgaatacg tgggcaccct ggagcacaac cacttcagcg 2550

atggtgcctc gcagcccct ctgaccatca gccagcccca gaaggccact 2600

ggaagcgctg gcctccttgg ggaccccgag tgtgagggct cgcccccga 2650

gcacagcccg gagcaggggc gctccctgag cacggcccct gtcgtccagc 2700

ccctgtccat ccaggacctc gtccgggaag gcagccgggg tcgggcctcc 2750

gacttccgcg gcgggagcct catgagcggg agcagcgcgg ccaaggtggt 2800

gctcaccctc tccacgcaag ccgacaggct ctttgaagat gctacggata 2850

agttgaacct catggccttg ggaggttttc tttaccagct gaagaaagca 2900

tcgcagtctc agcttttcca ttctgttaca gatacagttg attactctct 2950

ggcaatgcca ggagaagtta aatccactca agaccgaaaa agcgccctcc 3000

acctgttccg cctggggaat gccatgctga ggattgtgcg gagcaaagca 3050

cggcccctgc tccacgtgat gcgctgctgg agccttgtgg ccccacacct 3100

ggtggaggct gcttgccata aggaaagaca tgtgtctcag aaggctgttt 3150

ccttcatcca tgacatactg acagaagtcc tcactgactg gaatgagcca 3200

cctcattttc acttcaatga agcactcttc cgacctttcg agcgcattat 3250

gcagctggaa ttgtgtgatg aggacgtcca agaccaggtt gtcacatcca 3300

ttggtgagct ggttgaagtg tgttccacgc agatccagtc gggatggaga 3350

cccttgttca gtgccctgga aacagtgcat ggcgggaaca agtcagagat 3400

gaaggagtac ctggttggtg actactccat gggaaaaggc caagctccag 3450

tgtttgatgt atttgaagct tttctcaata ctgacaacat ccaggtcttt 3500

gctaatgcag ccactagcta catcatgtgc cttatgaagt ttgtcaaagg 3550

actggggag gtggactgta aagagattgg agactgtgcc ccagcacccg 3600
```

```
gagccccgtc cacagacctg tgcctcccgg ccctggatta cctcaggcgc 3650

tgctctcagt tattggccaa aatctacaaa atgcccttga agccaatatt 3700

ccttagtggg agacttgccg gcttgcctcg aagacttcag gaacagtcag 3750

ccagcagtga ggatggaatt gaatcagtcc tgtctgattt tgatgatgac 3800

accggtctga tagaagtctg gataatcctg ctggagcagc tgacagcggc 3850

tgtgtccaat tgtccacggc agcaccaacc accaactctg gatttactct 3900

ttgagctgtt gagagatgtg acgaaaacac caggaccagg gtttggtatc 3950

tatgcagtgg ttcacctcct ccttcctgtg atgtccgttt ggctccgccg 4000

gagccataaa gaccattcct actgggatat ggcctctgcc aatttcaagc 4050

acgctattgg tctgtcctgt gagctggtgg tggagcacat tcaaagcttt 4100

ctacattcag atatcaggta cgagagcatg atcaatacca tgctgaagga 4150

cctctttgag ttgctggtcg cctgtgtggc caagcccact gaaaccatct 4200

ccagagtggg ctgctcctgt attagatacg tccttgtgac agcgggccct 4250

gtgttcactg aggagatgtg gaggcttgcc tgctgtgccc tgcaagatgc 4300

gttctctgcc acactcaagc cagtgaagga cctgctgggc tgcttccaca 4350

gcggcacgga gagcttcagc ggggaaggct gccaggtgcg agtggcggcc 4400

ccgtcctcct ccccaagtgc cgaggccgag tactggcgca tccgagccat 4450

ggcccagcag gtgtttatgc tggacaccca gtgctcacca aagacaccaa 4500

acaactttga ccacgctcag tcctgccagc tcattattga gctgcctcct 4550

gatgaaaaac caaatggaca caccaagaaa agcgtgtctt tcagggaaat 4600

tgtggtgagc ctgctgtctc atcaggtgtt actccagaac ttatatgaca 4650

tcttgttaga agagtttgtc aaaggcccct ctcctggaga ggaaaagacg 4700

atacaagtgc cagaagccaa gctggctggc ttcctcagat acatctctat 4750

gcagaacttg gcagtcatat tcgacctgct gctggactct tataggactg 4800

ccagggagtt tgacaccagc cccgggctga agtgcctgct gaagaaagtg 4850

tctggcatcg ggggcgccgc caacctctac cgccagtctg cgatgagctt 4900

taacatttat ttccacgccc tggtgtgtgc tgttctcacc aatcaagaaa 4950

ccatcacggc cgagcaagtg aagaaggtcc tttttgagga cgacgagaga 5000

agcacggatt cttcccagca gtgttcatct gaggatgaag acatctttga 5050
```

```
ggaaaccgcc caggtcagcc ccccgagagg caaggagaag agacagtggc 5100

gggcacggat gcccttgctc agcgtccagc ctgtcagcaa cgcagattgg 5150

gtgtggctgg tcaagaggct gcacaagctg tgcatggaac tgtgcaacaa 5200

ctacatccag atgcacttgg acctggagaa ctgtatggag gagcctccca 5250

tcttcaaggg cgacccgttc ttcatcctgc cctccttcca gtccgagtca 5300

tccaccccat ccaccggggg cttctctggg aaagaaaccc cttccgagga 5350

tgacagaagc cagtcccggg agcacatggg cgagtccctg agcctgaagg 5400

ccggtggtgg ggacctgctg ctgcccccca gccccaaagt ggagaagaag 5450

gatcccagcc ggaagaagga gtggtgggag aatgcgggga caaaatcta 5500

caccatggca gccgacaaga ccatttcaaa gttgatgacc gaatacaaaa 5550

agaggaaaca gcagcacaac ctgtccgcgt tccccaaaga ggtcaaagtg 5600

gagaagaaag gagagccact gggtcccagg ggccaggact ccccgctgct 5650

tcagcgtccc cagcacttga tggaccaagg gcaaatgcgg cattccttca 5700

gcgcaggccc cgagctgctg cgacaggaca agaggccccg ctcaggctcc 5750

accgggagct ccctcagtgt ctcggtgaga gacgcagaag cacagatcca 5800

ggcatggacc aacatggtgc taacagttct caatcagatt cagattctcc 5850

cagaccagac cttcacggcc ctccagcccg cagtgttccc gtgcatcagt 5900

cagctgacct gtcacgtgac cgacatcaga gttcgccagg ctgtgaggga 5950

gtggctgggc agggtgggcc gtgtctatga catcattgtg tagccgactc 6000

ctgttctact ctcccaccaa ataacagtag tgagggttag agtcctgcca 6050

atacagctgt tgcattttcc ccaccactag ccccacttaa actactacta 6100

ctgtctcaga gaacagtgtt tcctaatgta aaaagccttt ccaaccactg 6150

atcagcattg gggccatact aaggtttgta tctagatgac acaaacgata 6200

ttctgatttt gcacattatt atagaagaat ctataatcct tgatatgttt 6250

ctaactcttg aagtatattt cccagtgctt ttgcttacag tgttgtcccc 6300

aaatgggtca ttttcaagga ttactcattt gaaaacacta tattgatcca 6350

tttgatccat catttaaaaa ataaatacaa ttcctaaggc aatatctgct 6400

ggtaagtcaa gctgataaac actcagacat ctagtaccag ggattattaa 6450

ttggaggaag atttatggtt atgggtctgg ctgggaagaa gacaactata 6500
```

77

```
aatacatatt  cttgggtgtc  ataatcaaga  aagaggtgac  ttctgttgta  6550

aaataatcca  gaacacttca  aaattattcc  taaatcatta  agattttcag  6600

gtattcacca  atttccccat  gtaaggtact  gtgttgtacc  tttatttctg  6650

tatttctaaa  agaagaaagt  tctttcctag  cagggtttga  agtctgtggc  6700

ttatcagcct  gtgacacaga  gtacccagtg  aaagtggctg  gtacgtagat  6750

tgtcaagaga  cataagaccg  accagccacc  ctggctgttc  ttgtggtgtt  6800

tgtttccatc  cccaaggcaa  acaaggaaag  gaaaggaaag  aagaaaaggt  6850

gccttagtcc  tttgttgcac  ttccatttcc  atgccccaca  attgtctgaa  6900

cataaggtat  agcatttggt  ttttaagaaa  acaaaacatt  aagacgcaac  6950

tcattttata  tcaacacgct  tggaggaaag  ggactcaggg  aagggagcag  7000

ggagtgtggg  gtggggatgg  attatgatga  aatcattttc  aatcttaaaa  7050

tataatacaa  caatcttgca  aaattatggt  gtcagttaca  caagctctag  7100

tctcaaaatg  aaagtaatgg  agaaagacac  tgaaatttag  aaaattttgt  7150

cgatttaaaa  tatttctcct  atctaccaag  taaagttacc  ctatgtttga  7200

tgtctttgca  ttcagaccaa  tatttcaggt  ggatatttct  aagtattact  7250

agaaaatacg  tttgaaagct  ttatcttatt  atttacagta  tttttatatt  7300

tcttacatta  tcctaatgat  tgaaaactcc  tcaatcaagc  ttacttacac  7350

acattctaca  gagttatttta  aggcatacat  tataatctcc  cagccccatt  7400

cataatgaat  aagtcaccct  ttaaatataa  gacacaaatt  ctacagtatt  7450

gaaataagga  tttaaagggg  tatttgtaaa  ctttgccctc  cttgagaaat  7500

atggaactac  cttagaggtt  aagaggaagg  cagtgttctg  acttctttag  7550

gtgatctgaa  aaaaacaccc  ttatcatcca  gtgtaccatc  tagagatcac  7600

cacagaatcc  attttttttcc  cagttccaca  aaacactctg  tttgccttca  7650

gtttttactc  actagacaat  aattcaagtt  tagaaacagg  taatcagcta  7700

tttgatctta  aaaggcaatg  aattgttggg  atatcagtga  actatgttgt  7750

atactttga  attttttacat  tttataaatg  gaattgaaag  ttggataact  7800

gctttttttta  aattttccaa  cagaagtaac  accacagttg  ctttgtttct  7850

ttttatagct  tacctgaggt  tcagttcttc  tttgtgaacc  tgtgagtact  7900

ccacagttta  ctgggggaaa  aggcttcagt  aaagcagagg  ctagaattac  7950
```

78

agtatttata catagcaact tttcataaag tagaaaaatt caaaggaagc 8000

tgtctcaatt tgagaatacc agctgggcac ggtcg 8035

<210> 45
<211> 3136
<212> DNA
<213> Homo sapien

<400> 45
cagagaggct gtatttcagt gcagcctgcc agacctcttc tggaggaaga 50

ctggacaaag ggggtcacac attccttcca tacggttgag cctctacctg 100

cctggtgctg gtcacagttc agcttcttca tgatggtgga tcccaatggc 150

aatgaatcca gtgctacata cttcatccta ataggcctcc ctggtttaga 200

agaggctcag ttctggttgg ccttcccatt gtgctccctc taccttattg 250

ctgtgctagg taacttgaca atcatctaca ttgtgcggac tgagcacagc 300

ctgcatgagc ccatgtatat atttctttgc atgctttcag gcattgacat 350

cctcatctcc acctcatcca tgcccaaaat gctggccatc ttctggttca 400

attccactac catccagttt gatgcttgtc tgctacagat ttttgccatc 450

cactccttat ctggcatgga atccacagtg ctgctggcca tggcttttga 500

ccgctatgtg gccatctgtc acccactgcg ccatgccaca gtacttacgt 550

tgcctcgtgt caccaaaatt ggtgtggctg ctgtggtgcg gggggctgca 600

ctgatggcac cccttcctgt cttcatcaag cagctgccct tctgccgctc 650

caatatcctt tcccattcct actgcctaca ccaagatgtc atgaagctgg 700

cctgtgatga tatccgggtc aatgtcgtct atggccttat cgtcatcatc 750

tccgccattg gcctggactc acttctcatc tccttctcat atctgcttat 800

tcttaagact gtgttgggct tgacacgtga gcccaggcc aaggcatttg 850

gcacttgcgt ctctcatgtg tgtgctgtgt tcatattcta tgtacctttc 900

attggattgt ccatggtgca tcgctttagc aagcggcgtg actctccgct 950

gcccgtcatc ttggccaata tctatctgct ggttcctcct gtgctcaacc 1000

caattgtcta tggagtgaag acaaaggaga ttcgacagcg catccttcga 1050

cttttccatg tggccacaca cgcttcagag ccctaggtgt cagtgatcaa 1100

acttcttttc cattcagagt cctctgattc agattttaat gttaacattt 1150

tggaagacag tattcagaaa aaaaatttcc ttaataaaaa atacaactca 1200

79

```
gatccttcaa atatgaaact ggttggggaa tctccatttt ttcaatatta 1250

ttttcttctt tgttttcttg ctacatataa ttattaatac cctgactagg 1300

ttgtggttgg agggttatta cttttcattt taccatgcag tccaaatcta 1350

aactgcttct actgatggtt tacagcattc tgagataaga atggtacatc 1400

tagagaacat ttgccaaagg cctaagcacg gcaaaggaaa ataaacacag 1450

aatataataa aatgagataa tctagcttaa aactataact tcctcttcag 1500

aactcccaac cacattggat ctcagaaaaa tgctgtcttc aaaatgactt 1550

ctacagagaa gaaataattt ttcctctgga cactagcact taaggggaag 1600

attggaagta aagccttgaa aagagtacat ttacctacgt taatgaaagt 1650

tgacacactg ttctgagagt tttcacagca tatggaccct gtttttccta 1700

tttaattttc ttatcaaccc tttaattagg caaagatatt attagtaccc 1750

tcattgtagc catgggaaaa ttgatgttca gtggggatca gtgaattaaa 1800

tggggtcata caagtataaa aattaaaaaa aaaaaagact tcatgcccaa 1850

tctcatatga tgtggaagaa ctgttagaga gaccaacagg gtagtgggtt 1900

agagatttcc agagtcttac attttctaga ggaggtattt aatttcttct 1950

cactcatcca gtgttgtatt taggaatttc ctggcaacag aactcatggc 2000

tttaatccca ctagctattg cttattgtcc tggtccaatt gccaattacc 2050

tgtgtcttgg aagaagtgat ttctaggttc accattatgg aagattctta 2100

ttcagaaagt ctgcataggg cttatagcaa gttatttatt tttaaaagtt 2150

ccataggtga ttctgatagg cagtgaggtt agggagccac cagttatgat 2200

gggaagtatg gaatggcagg tcttgaagat aacattggcc ttttgagtgt 2250

gactcgtagc tggaaagtga gggaatcttc aggaccatgc tttatttggg 2300

gctttgtgca gtatggaaca gggactttga gaccaggaaa gcaatctgac 2350

ttaggcatgg gaatcaggca tttttgcttc tgaggggcta ttaccaaggg 2400

ttaataggtt tcatcttcaa caggatatga caacagtgtt aaccaagaaa 2450

ctcaaattac aaatactaaa acatgtgatc atatatgtgg taagtttcat 2500

tttctttttc aatcctcagg ttccctgata tggattccta aacatgctt 2550

tcatcccctt ttgtaatgga tatcatattt ggaaatgcct atttaatact 2600

tgtatttgct gctggactgt aagcccatga gggcactgtt tattattgaa 2650
```

80

```
tgtcatctct gttcatcatt gactgctctt tgctcatcat tgaatccccc 2700

agcaaagtgc ctagaacata atagtgctta tgcttgacac cggttatttt 2750

tcatcaaacc tgattccttc tgtcctgaac acatagccag gcaattttcc 2800

agccttcttt gagttgggta ttattaaatt ctggccatta cttccaatgt 2850

gagtggaagt gacatgtgca atttctatac ctggctcata aaaccctccc 2900

atgtgcagcc tttcatgttg acattaaatg tgacttggga agctatgtgt 2950

tacacagagt aaatcaccag aagcctggat ttctgaaaaa actgtgcaga 3000

gccaaacctc tgtcatttgc aactcccact tgtatttgta cgaggcagtt 3050

ggataagtga aaaataaagt actattgtgt caagaaaaaa aaaaaaaaaa 3100

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 3136
```

<210> 46
<211> 491
<212> DNA
<213> Homo sapien

<220>
<221> Unsure
<222> 434-435, 450
<223> Unknown base

<400> 46
```
agcaccttgg cacagctgaa gcagaggaac acgctgaagg atggtatcat 50

catgatccag acgctgctga tcatcctctt catcatcgtg cctatcttcc 100

tgctgctgga caaggatgac agcaaggctg gcatggagga agatcacacc 150

tacgagggcc tggacattga ccagacagcc acctatgagg acatagtgac 200

gctgcggaca ggggaagtga agtggtctgt aggtgagcac ccaggccagg 250

agtgagagcc aggtcgcccc atgacctggg tgcaggctcc ctggcctcag 300

tgactgcttc ggagctgcct ggctcatggc ccaacccctt tcccggaccc 350

cccagctggc ctctgaagct ggcccaccag agctgccatt tgtctcaccc 400

ctggtgtcca gctcttgcca aagggcctgg agtnnaagga caacaggcan 450

cacttggagg gagttctctg gggatggacg ggacccacct t 491
```

<210> 47
<211> 1650
<212> DNA
<213> Homo sapien

<400> 47
```
caggaaggtt cctctcccag tggccatggg tagcaacagt gggcaggctg 50
```

81

gccgccacat ctataaatcc ctagctgatg atggcccctt tgactctgtg 100

gagccgccta aaagacccac cagcagactc atcatgcaca gcatggccat 150

gttcggaaga gagttctgct acgcggtgga ggcagcgtat gtgaccccag 200

tcctgctcag cgtaggtctg cccagcagcc tgtacagcat tgtgtggttc 250

ctcagcccca tcctgggatt cctgctgcag cccgtggtcg gatcggccag 300

cgaccactgc cggtccaggt ggggccgccg gagaccctac atcctcaccc 350

tgggagtcat gatgctcgtg ggcatggctc tgtacctcaa tggggctact 400

gttgtagcag ctttgattgc taacccaagg aggaagctgg tttgggccat 450

aagtgtcacc atgataggtg tcgttctctt tgattttgct gccgacttca 500

ttgatgggcc catcaaagcc tacttatttg atgtctgctc ccatcaggac 550

aaggagaagg gcctccacta ccatgccctc ttcacaggtt ttggaggtgc 600

cctgggttac ctttttgggtg ctatagactg ggcccatctg gagctgggaa 650

gactgttggg tacagaattc caggtcatgt tcttcttctc tgcattggtg 700

ctcactttgt gttttactgt tcatctgtgc agtatctctg aagccccact 750

tacagaggtt gcaaagggca ttcccccaca gcaaacccct caggaccctc 800

cattgtcatc agatggaatg tacgagtatg gttctatcga gaaagttaaa 850

aatggttacg taaatccaga gctggcaatg cagggagcaa aaaacaaaaa 900

tcatgctgaa cagactcgca gggcaatgac attaaagtca ctgctgagag 950

cactggtgaa catgcctcct cactaccgct acctttgcat cagccacctc 1000

attggatgga cggccttcct gtccaacatg ctgttcttca cagatttcat 1050

gggccagatt gtgtaccgcg gggatcccta tagtgcacac aactccacag 1100

agtttctcat ctacgaaaga ggagtcgagg ttggatgttg gggcttctgc 1150

atcaactccg tgttttcctc actttattct tactttcaga aagtttttggt 1200

atcctacatt ggattaaagg gtctttactt cacgggatat ttgctgtttg 1250

gcctggggac gggatttatt gggctcttcc cgaatgtcta ctccaccctg 1300

gtcctgtgca gcctgtttgg tgtaatgtcc agcaccctgt acactgtgcc 1350

ctttaacctc attactgagt accaccgcga ggaagaaaag gagaggcagc 1400

aggccccagg aggggaccca gacaacagcg tgagagggaa gggcatggac 1450

tgcgccaccc tcacatgcat ggtgcagctg gctcagatcc tggtcggagg 1500

82

tggcctgggc tttctggtca acacagccgg gaccgttgtc gtcgtggtga 1550

tcacagcgtc tgcggtggca ctgataggct gttgctttgt cgctctcttt 1600

gttagatatg tggattaggt caataaagag acaatgaccc taaaaaaaaa 1650

<210> 48
<211> 3462
<212> DNA
<213> Homo sapien

<400> 48
gaatcatcca cgcacctgca gctctgctga gagagtgcaa gccgtggggg 50

ttttgagctc atcttcatca ttcatatgag gaaataagtg gtaaaatcct 100

tggaaataca atgagactca tcagaaacat ttacatattt tgtagtattg 150

ttatgacagc agagggtgat gctccagagc tgccagaaga aagggaactg 200

atgaccaact gctccaacat gtctctaaga aaggttcccg cagacttgac 250

cccagccaca acgacactgg atttatccta taacctcctt tttcaactcc 300

agagttcaga ttttcattct gtctccaaac tgagagtttt gattctatgc 350

cataacagaa ttcaacagct ggatctcaaa acctttgaat tcaacaagga 400

gttaagatat ttagatttgt ctaataacag actgaagagt gtaacttggt 450

atttactggc aggtctcagg tatttagatc tttcttttaa tgactttgac 500

accatgccta tctgtgagga agctggcaac atgtcacacc tggaaatcct 550

aggtttgagt ggggcaaaaa tacaaaaatc agatttccag aaaattgctc 600

atctgcatct aaatactgtc ttcttaggat tcagaactct tcctcattat 650

gaagaaggta gcctgcccat cttaaacaca acaaaactgc acattgtttt 700

accaatggac acaaatttct gggttctttt gcgtgatgga atcaagactt 750

caaaaatatt agaaatgaca aatatagatg gcaaaagcca atttgtaagt 800

tatgaaatgc aacgaaatct tagtttagaa aatgctaaga catcggttct 850

attgcttaat aaagttgatt tactctggga cgacctttttc cttatcttac 900

aatttgtttg gcatacatca gtggaacact ttcagatccg aaatgtgact 950

tttggtggta aggcttatct tgaccacaat tcatttgact actcaaatac 1000

tgtaatgaga actataaaat tggagcatgt acatttcaga gtgttttaca 1050

ttcaacagga taaaatctat ttgctttttga ccaaaatgga catagaaaac 1100

ctgacaatat caaatgcaca aatgccacac atgctttttcc cgaattatcc 1150

83

```
tacgaaattc caatatttaa attttgccaa taatatctta acagacgagt 1200

tgtttaaaag aactatccaa ctgcctcact tgaaaactct cattttgaat 1250

ggcaataaac tggagacact ttctttagta agttgctttg ctaacaacac 1300

acccttggaa cacttggatc tgagtcaaaa tctattacaa cataaaaatg 1350

atgaaaattg ctcatggcca gaaactgtgg tcaatatgaa tctgtcatac 1400

aataaattgt ctgattctgt cttcaggtgc ttgcccaaaa gtattcaaat 1450

acttgaccta aataataacc aaatccaaac tgtacctaaa gagactattc 1500

atctgatggc cttacgagaa ctaaatattg catttaattt tctaactgat 1550

ctccctggat gcagtcattt cagtagactt tcagttctga acattgaaat 1600

gaacttcatt ctcagcccat ctctggattt tgttcagagc tgccaggaag 1650

ttaaaactct aaatgcggga agaaatccat tccggtgtac ctgtgaatta 1700

aaaaatttca ttcagcttga aacatattca gaggtcatga tggttggatg 1750

gtcagattca tacacctgtg aatacccttt aaacctaagg ggaactaggt 1800

taaaagacgt tcatctccac gaattatctt gcaacacagc tctgttgatt 1850

gtcaccattg tggttattat gctagttctg gggttggctg tggccttctg 1900

ctgtctccac tttgatctgc cctggtatct caggatgcta ggtcaatgca 1950

cacaaacatg gcacagggtt aggaaaacaa cccaagaaca actcaagaga 2000

aatgtccgat tccacgcatt tatttcatac agtgaacatg attctctgtg 2050

ggtgaagaat gaattgatcc ccaatctaga gaaggaagat ggttctatct 2100

tgatttgcct ttatgaaagc tactttgacc ctggcaaaag cattagtgaa 2150

aatattgtaa gcttcattga gaaaagctat aagtccatct ttgttttgtc 2200

tcccaacttt gtccagaatg agtggtgcca ttatgaattc tactttgccc 2250

accacaatct cttccatgaa aattctgatc atataattct tatcttactg 2300

gaacccattc cattctattg cattcccacc aggtatcata aactgaaagc 2350

tctcctggaa aaaaagcat acttggaatg gcccaaggat aggcgtaaat 2400

gtgggctttt ctgggcaaac cttcgagctg ctattaatgt taatgtatta 2450

gccaccagag aaatgtatga actgcagaca ttcacagagt taaatgaaga 2500

gtctcgaggt tctacaatct ctctgatgag aacagattgt ctataaaatc 2550

ccacagtcct tgggaagttg gggaccacat acactgttgg gatgtacatt 2600
```

84

```
gatacaacct ttatgatggc aatttgacaa tatttattaa aataaaaaat 2650

ggttattccc ttcatatcag tttctagaag gatttctaag aatgtatcct 2700

atagaaacac cttcacaagt ttataagggc ttatggaaaa aggtgttcat 2750

cccaggattg tttataatca tgaaaaatgt ggccaggtgc agtggctcac 2800

tcttgtaatc ccagcactat gggaggccaa ggtgggtgac ccacgaggtc 2850

aagagatgga gaccatcctg gccaacatgg tgaaaccctg tctctactaa 2900

aaatacaaaa attagctggg cgtgatggtg cacgcctgta gtcccagcta 2950

cttgggaggc tgaggcagga gaatcgcttg aacccgggag gtggcagttg 3000

cagtgagctg agatcgagcc actgcactcc agcctggtga cagagcgaga 3050

ctccatctca aaaaaagaa aaaaaaaaa gaaaaaaatg gaaaacatcc 3100

tcatggccac aaaataaggt ctaattcaat aaattatagt acattaatgt 3150

aatataatat tacatgccac taaaaagaat aaggtagctg tatatttcct 3200

ggtatggaaa aaacatatta atatgttata aactattagg ttggtgcaaa 3250

actaattgtg gtttttgcca ttgaaatggc attgaaataa aagtgtaaag 3300

aaatctatac cagatgtagt aacagtggtt tgggtctggg aggttggatt 3350

acagggagca tttgatttct atgttgtgta tttctataat gtttgaattg 3400

tttagaatga atctgtattt cttttataag tagaaaaaaa ataaagatag 3450

tttttacagc ct 3462
```

<210> 49
<211> 4492
<212> DNA
<213> Homo sapien

<400> 49
```
 gtcacctgga tggtgtaaag gaaacaagag acaggaacag agcccctcat 50

 ctcacctctg ggctaccata cagaaaagca gaattggcag gaactgaaaa 100

 tgactaggaa gaggacatac tgggtgccca actcttctgg tggcctcgtg 150

 aatcgtggca tcgacatagg cgatgacatg gtttcaggac ttatttataa 200

 aacctatact ctccaagatg gcccctggag tcagcaagag agaaatcctg 250

 aggctccagg gagggcagct gtcccaccgt gggggaagta tgatgctgcc 300

 ttgagaacca tgattccctt ccgtcccaag ccgaggtttc ctgcccccca 350

 gcccctggac aatgctggcc tgttctccta cctcaccgtg tcatggctca 400
```
```

85
```

```
ccccgctcat gatccaaagc ttacggagtc gcttagatga gaacaccatc 450

cctccactgt cagtccatga tgcctcagac aaaaatgtcc aaaggcttca 500

ccgcctttgg gaagaagaag tctcaaggcg agggattgaa aaagcttcag 550

tgcttctggt gatgctgagg ttccagagaa caaggttgat tttcgatgca 600

cttctgggca tctgcttctg cattgccagt gtactcgggc caatattgat 650

tataccaaag atcctggaat attcagaaga gcagttgggg aatgttgtcc 700

atggagtggg actctgcttt gccctttttc tctccgaatg tgtgaagtct 750

ctgagtttct cctccagttg gatcatcaac caacgcacag ccatcaggtt 800

ccgagcagct gtttcctcct ttgcctttga gaagctcatc caatttaagt 850

ctgtaataca catcacctca ggagaggcca tcagcttctt caccggtgat 900

gtaaactacc tgtttgaagg ggtgtgctat ggacccctag tactgatcac 950

ctgcgcatcg ctggtcatct gcagcatttc ttcctacttc attattggat 1000

acactgcatt tattgccatc ttatgctatc ccctggtttt cccactggag 1050

gtattcatga caagaatggc tgtgaaggct cagcatcaca catctgaggt 1100

cagcgaccag cgcatccgtg tgaccagtga agttctcact tgcattaagc 1150

tgattaaaat gtacacatgg gagaaaccat ttgcaaaaat cattgaagac 1200

ctaagaagga aggaaaggaa gctattggag aagtgcgggc ttgtccagag 1250

cctgacaagt ataaccttgt tcatcatccc cgcagtggcc acagcggtct 1300

gggttctcat ccacacatcc ttaaagctga aactcacagc gtcaatggcc 1350

ttcagcatgc tagcctcctt gaatctcctt cggctgtcag tgttctttgt 1400

gcctattgca gtcaaaggtc tcacgaattc caagtctgca gtgatgaggt 1450

tcaagaagtt tttcctccag gagagccctg ttttctatgt ccagacatta 1500

caagacccca gcaaagctct ggtctttgag gaggccacct tgtcatggca 1550

acagacctgt cccgggatcg tcaatggggc actggagctg gagaggaacg 1600

ggcatgcttc tgaggggatg accaggccta gagatgccct cgggccagag 1650

gaagaaggga acagcctggg cccagagttg cacaagatca acctggtggt 1700

gtccaagggg atgatgttag gggtctgcgg caacacgggg agtggtaaga 1750

gcagcctgtt gtcagccatc ctggaggaga tgcacttgct cgagggctcg 1800

gtggggggtgc agggaagcct ggcctatgtc ccccagcagg cctggatcgt 1850
```

86

```
cagcgggaac atcagggaga acatcctcat gggaggcgca tatgacaagg 1900

cccgatacct ccaggtgctc cactgctgct ccctgaatcg ggacctggaa 1950

cttctgccct ttggagacat gacagagatt ggagagcggg gccccaacct 2000

ctctggggggg cagaaacaga ggatcagcct ggcccgcgcc gtctattccg 2050

accgtcagat ctacctgctg gacgaccccc tgtctgctgt ggacgcccac 2100

gtggggaagc acatttttga ggagtgcatt aagaagacac tcaggggggaa 2150

gacggtcgtc caggtgaccc accagctgca gtacttagaa ttttgtggcc 2200

aggtcatttt gttggaaaat gggaaaatct gtgaaaatgg aactcacagt 2250

gagttaatgc agaaaaaggg gaaatatgcc caacttatcc agaagatgca 2300

caaggaagcc acttcggaca tgttgcagga cacagcaaag atagcagaga 2350

agccaaaggt agaaagtcag gctctggcca cctccctgga agagtctctc 2400

aacggaaatg ctgtgccgga gcatcagctc acacaggagg aggagatgga 2450

agaaggctcc ttgagttgga gggtctacca ccactacatc caggcagctg 2500

gaggttacat ggtctcttgc ataattttct tctttgtggt gctgatcgtc 2550

ttcttaacga tcttcagctt ctggtggctg agctactggt tggagcaggg 2600

ctcggggacc aatagcagcc gagagagcaa tggaaccatg gcagacctgg 2650

gcaacattgc agacaatcct caactgtcct tctaccagct ggtgtacggg 2700

ctcaacgccc tgctcctcat ctgtgtgggg gtctgctcct cagggatttt 2750

caccaaggtc acgaggaagg catccacggc cctgcacaac aagctcttca 2800

acaaggtttt ccgctgcccc atgagtttct ttgacaccat cccaataggc 2850

cggcttttga actgcttcgc aggggacttg gaacagctgg accagctctt 2900

gcccatcttt tcagagcagt tcctggtcct gtccttaatg gtgatcgccg 2950

tcctgttgat tgtcagtgtg ctgtctccat atatcctgtt aatgggagcc 3000

ataatcatgg ttatttgctt catttattat atgatgttca aggaggccat 3050

cggtgtgttc aagagactgg agaactatag ccggtctcct ttattctccc 3100

acatcctcaa ttctctgcaa ggcctgagct ccatccatgt ctatggaaaa 3150

actgaagact tcatcagcca gtttaagagg ctgactgatg cgcagaataa 3200

ctacctgctg ttgtttctat cttccacacg atggatggca ttgaggctgg 3250

agatcatgac caaccttgtg accttggccg ttgccctgtt cgtggctttt 3300
```

87

```
ggcatttcct ccaccccta ctcctttaaa gtcatggctg tcaacatcgt 3350

gctgcagctg gcgtccagct tccaggccac tgcccggatt ggcttggaga 3400

cagaggcaca gttcacggct gtagagagga tactgcagta catgaagatg 3450

tgtgtctcgg aagctccttt acacatggaa ggcacaagtt gtccccaggg 3500

gtggccacag catggggaaa tcatatttca ggattatcac atgaaataca 3550

gagacaacac acccaccgtg cttcacggca tcaacctgac catccgcggc 3600

cacgaagtgg tgggcatcgt gggaaggacg ggctctggga agtcctcctt 3650

gggcatggct ctcttccgcc tggtggagcc catggcaggc cggattctca 3700

ttgacggcgt ggacatttgc agcatcggcc tggaggactt gcggtccaag 3750

ctctcagtga tccctcaaga tccagtgctg ctctcaggaa ccatcagatt 3800

caacctagat ccctttgacc gtcacaccga ccagcagatc tgggatgcct 3850

tggagaggac attcctgacc aaggccatct caaagttccc caaaaagctg 3900

catacagatg tggtggaaaa cggtggaaac ttctctgtgg gggagaggca 3950

gctgctctgc attgccaggg ctgtgcttcg caactccaag atcatcctta 4000

tcgatgaagc cacagcctcc attgacatgg agacagacac cctgatccag 4050

cgcacaatcc gtgaagcctt ccaggctgc accgtgctcg tcattgccca 4100

ccgtgtcacc actgtgctga actgtgaccg catcctggtt atgggcaatg 4150

ggaaggtggt agaatttgat cggccggagg tactgcggaa gaagcctggg 4200

tcattgttcg cagccctcat ggccacagcc acttcttcac tgagataagg 4250

agatgtggag acttcatgga ggctggcagc tgagctcaga ggttcacaca 4300

gctgcagctt cgaggcccac agtctgcgac cttcttgttt ggagatgaga 4350

acttctcctg gaagcagggg taaatgtagg gggggtgggg attgctggat 4400

ggaaaccctg gaataggcta cttgatggct ctcaagacct tagaacccca 4450

gaaccatcta agacatggga ttcagtgatc atgtggttct cc 4492
```

<210> 50
<211> 2667
<212> DNA
<213> Homo sapien

<220>
<221> Unsure
<222> 2039-2042
<223> Unknown base

<400> 50
ggttgccaca gctggtttag ggccccgacc actggggccc cttgtcagga 50

ggagacagcc tcccggcccg gggaggacaa gtcgctgcca cctttggctg 100

ccgacgtgat tccctgggac ggtccgtttc ctgccgtcag ctgccggccg 150

agttgggtct ccgtgtttca ggccggctcc cccttcctgg tctcccttct 200

cccgctgggc cggtttatcg ggaggagatt gtcttccagg gctagcaatt 250

ggacttttga tgatgtttga cccagcggca ggaatagcag gcaacgtgat 300

ttcaaagctg ggctcagcct ctgtttcttc tctcgtgtaa tcgcaaaacc 350

cattttggag caggaattcc aatcatgtct gtgatggtgg tgagaaagaa 400

ggtgacacgg aaatgggaga aactcccagg caggaacacc ttttgctgtg 450

atggccgcgt catgatggcc cggcaaaagg gcattttcta cctgaccctt 500

ttcctcatcc tggggacatg tacactcttc ttcgcctttg agtgccgcta 550

cctggctgtt cagctgtctc ctgccatccc tgtatttgct gccatgctct 600

tccttttctc catggctaca ctgttgagga ccagcttcag tgaccctgga 650

gtgattcctc gggcgctacc agatgaagca gctttcatag aaatggagat 700

agaagctacc aatggtgcgg tgccccaggg ccagcgacca ccgcctcgta 750

tcaagaattt ccagataaac aaccagattg tgaaactgaa atactgttac 800

acatgcaaga tcttccggcc tccccgggcc tcccattgca gcatctgtga 850

caactgtgtg gagcgcttcg accatcactg cccctgggtg gggaattgtg 900

ttggaaagag gaactaccgc tacttctacc tcttcatcct ttctctctcc 950

ctcctcacaa tctatgtctt cgccttcaac atcgtctatg tggccctcaa 1000

atctttgaaa attggcttct tggagacatt gaaagaaact cctggaactg 1050

ttctagaagt cctcatttgc ttctttacac tctggtccgt cgtgggactg 1100

actggatttc atactttcct cgtggctctc aaccagacaa ccaatgaaga 1150

catcaaagga tcatggacag ggaagaatcg cgtccagaat ccctacagcc 1200

atggcaatat tgtgaagaac tgctgtgaag tgctgtgtgg ccccttgccc 1250

cccagtgtgc tggatcgaag gggtattttg ccactggagg aaagtggaag 1300

tcgacctccc agtactcaag agaccagtag cagcctcttg ccacagagcc 1350

cagcccccac agaacacctg aactcaaatg agatgccgga ggacagcagc 1400

actcccgaag agatgccacc tccagagccc ccagagccac cacaggaggc 1450

```
agctgaagct gagaagtagc ctatctatgg aagagacttt tgtttgtgtt 1500

taattagggc tatgagagat ttcaggtgag aagttaaacc tgagacagag 1550

agcaagtaag ctgtcccttt taactgtttt tctttggtct ttagtcaccc 1600

agttgcacac tggcattttc ttgctgcaag cttttttaaa tttctgaact 1650

caaggcagtg gcagaagatg tcagtcacct ctgataactg gaaaaatggg 1700

tctcttgggc cctggcactg gttctccatg gcctcagcca cagggtcccc 1750

ttggaccccc tctcttccct ccagatccca gccctcctgc ttggggtcac 1800

tggtctcatt ctggggctaa aagttttga gactggctca aatcctccca 1850

agctgctgca cgtgctgagt ccagaggcag tcacagagac ctctggccag 1900

gggatcctaa ctgggttctt ggggtcttca ggactgaaga ggagggagag 1950

tggggtcaga agattctcct ggccaccaag tgccagcatt gcccacaaat 2000

cctttagga atgggacagg taccttccac ttgttgtann nnttgttttt 2050

cctttgact cctgctccca ttaggagcag gaatggcagt aataaaagtc 2100

tgcactttgg tcatttcttt tcctcagagg aagcccgagt gctcacttaa 2150

acactatccc ctcagactcc ctgtgtgagg cctgcagagg ccctgaatgc 2200

acaaatggga aaccaaggca cagagaggct ctcctctcct ctcctctccc 2250

ccgatgtacc ctcaaaaaaa aaaaaatgct aaccagttct tccattaagc 2300

ctcggctgag tgagggaaag cccagcactg ctgccctctc gggtaactca 2350

ccctaaggcc tcggcccacc tctggctatg gtaaccacac tgggggcttc 2400

ctccaagccc cgctcttcca gcacttccac cggcagagtc ccagagccac 2450

ttcaccctgg gggtgggctg tggcccccag tcagctctgc tcaggacctg 2500

ctctatttca gggaagaaga tttatgtatt atatgtggct atatttccta 2550

gagcacctgt gttttcctct ttctaagcca gggtcctgtc tggatgactt 2600

atgcggtggg ggagtgtaaa ccggaacttt tcatctattt gaaggcgatt 2650

aaactgtgtc taatgca 2667
```

<210> 51
<211> 1819
<212> DNA
<213> Homo sapien

<400> 51
```
gagccgccgc cgcgcgcgcg ccgcgcactg cagccccagg ccccggcccc 50
```

```
ccacccacgt ctgcgttgct gccccgcctg ggccaggccc caaaggcaag 100

gacaaagcag ctgtcaggga acctccgccg gagtcgaatt tacgtgcagc 150

tgccggcaac cacaggttcc aagatggttt gcgggggctt cgcgtgttcc 200

aagaactgcc tgtgcgccct caacctgctt tacaccttgg ttagtctgct 250

gctaattgga attgctgcgt ggggcattgg cttcgggctg atttccagtc 300

tccgagtggt cggcgtggtc attgcagtgg gcatcttctt gttcctgatt 350

gctttagtgg gtctgattgg agctgtaaaa catcatcagg tgttgctatt 400

tttttatatg attattctgt tacttgtatt tattgttcag ttttctgtat 450

cttgcgcttg tttagccctg aaccaggagc aacagggtca gcttctggag 500

gttggttgga acaatacggc aagtgctcga aatgacatcc agagaaatct 550

aaactgctgt gggttccgaa gtgttaaccc aaatgacacc tgtctggcta 600

gctgtgttaa aagtgaccac tcgtgctcgc catgtgctcc aatcatagga 650

gaatatgctg gagaggtttt gagatttgtt ggtggcattg gcctgttctt 700

cagttttaca gagatcctgg gtgtttggct gacctacaga tacaggaacc 750

agaaagaccc ccgcgcgaat cctagtgcat tcctttgatg agaaaacaag 800

gaagatttcc tttcgtatta tgatcttgtt cactttctgt aattttctgt 850

taagctccat ttgccagttt aaggaaggaa acactatctg gaaaagtacc 900

ttattgatag tggaattata tattttact ctatgtttct ctacatgttt 950

ttttctttcc gttgctgaaa aatatttgaa acttgtggtc tctgaagctc 1000

ggtggcacct ggaatttact gtattcattg tcgggcactg tccactgtgg 1050

cctttcttag cattttacc tgcagaaaaa ctttgtatgg taccactgtg 1100

ttggttatat ggtgaatctg aacgtacatc tcactggtat aattatatgt 1150

agcactgtgc tgtgtagata gttcctactg gaaaaagagt ggaaatttat 1200

taaaatcaga aagtatgaga tcctgttatg ttaagggaaa tccaaattcc 1250

caattttttt tggtcttttt aggaaagatt gttgtggtaa aaagtgttag 1300

tataaaaatg ataatttact tgtagtcttt tatgattaca ccaatgtatt 1350

ctagaaatag ttatgtctta ggaaattgtg gtttaatttt tgacttttac 1400

aggtaagtgc aaaggagaag tggtttcatg aaatgttcta atgtataata 1450

acatttacct tcagcctcca tcagaatgga acgagttttg agtaatcagg 1500
```

91

```
aagtatatct atatgatctt gatattgttt tataataatt tgaagtctaa 1550

aagactgcat ttttaaacaa gttagtatta atgcgttggc ccacgtagca 1600

aaaagatatt tgattatctt aaaaattgtt aaataccgtt ttcatgaaat 1650

ttctcagtat tgtaacagca acttgtcaaa cctaagcata tttgaatatg 1700

atctcccata atttgaaatt gaaatcgtat tgtgtggctc tgtatattct 1750

gttaaaaaat taaaggacag aaacctttct ttgtgtatgc atgtttgaat 1800

taaaagaaag taatggaag 1819
```

<210> 52
<211> 2061
<212> DNA
<213> Homo sapien

<400> 52
```
cagtcaccat gaagctgggc tgtgtcctca tggcctgggc cctctacctt 50

tcccttggtg tgctctgggt ggcccagatg ctactggctg ccagttttga 100

gacgctgcag tgtgagggac ctgtctgcac tgaggagagc agctgccaca 150

cggaggatga cttgactgat gcaagggaag ctggcttcca ggtcaaggcc 200

tacactttca gtgaaccctt ccacctgatt gtgtcctatg actggctgat 250

cctccaaggt ccagccaagc cagtttttga aggggacctg ctggttctgc 300

gctgccaggc ctggcaagac tggccactga ctcaggtgac cttctaccga 350

gatggctcag ctctgggtcc ccccgggcct aacagggaat tctccatcac 400

cgtggtacaa aaggcagaca gcgggcacta ccactgcagt ggcatcttcc 450

agagccctgg tcctgggatc ccagaaacag catctgttgt ggctatcaca 500

gtccaagaac tgtttccagc gccaattctc agagctgtac cctcagctga 550

accccaagca ggaagcccca tgaccctgag ttgtcagaca agttgcccc 600

tgcagaggtc agctgcccgc ctcctcttct ccttctacaa ggatggaagg 650

atagtgcaaa gcaggggggct ctcctcagaa ttccagatcc ccacagcttc 700

agaagatcac tccgggtcat actggtgtga ggcagccact gaggacaacc 750

aagtttggaa acagagcccc cagctagaga tcagagtgca gggtgcttcc 800

agctctgctg cacctcccac attgaatcca gctcctcaga aatcagctgc 850

tccaggaact gctcctgagg aggcccctgg gcctctgcct ccgccgccaa 900

ccccatcttc tgaggatcca ggcttttctt ctcctctggg gatgccagat 950
```

92

```
cctcatctgt atcaccagat gggccttctt ctcaaacaca tgcaggatgt 1000

gagagtcctc ctcggtcacc tgctcatgga gttgagggaa ttatctggcc 1050

accagaagcc tgggaccaca aaggctactg ctgaatagaa gtaaacagtt 1100

catccatgat ctcacttaac caccccaata aatctgattc tttattttct 1150

cttcctgtcc tgcacatatg cataagtact tttacaagtt gtcccagtgt 1200

tttgttagaa taatgtagtt aggtgagtgt aaataaattt atataaagtg 1250

agaattagag tttagctata attgtgtatt ctctcttaac acaacagaat 1300

tctgctgtct agatcaggaa tttctatctg ttatatcgac cagaatgttg 1350

tgatttaaag agaactaatg gaagtggatt gaatacagca gtctcaactg 1400

ggggcaattt tgcccccccag aggacattgg gcaatgtttg gagacatttt 1450

ggtcattata cttggggggt tgggggatgg tgggatgtgt gtctactggc 1500

atccagtaaa tagaagccag gggtgccgct aaacatccta taatgcacag 1550

ggcagtaccc cacaacgaaa aataatctgg cccaaaatgt cagttgtact 1600

gagtttgaga aaccccagcc taatgaaacc ctaggtgttg ggctctggaa 1650

tgggactttg tcccttctaa ttattatctc tttccagcct cattcagcta 1700

ttcttactga cataccagtc tttagctggt gctatggtct gttctttagt 1750

tctagtttgt atcccctcaa aagccattat gttgaaatcc taatccccaa 1800

ggtgatggca ttaagaagtg ggcctttggg aagtgattag atcaggagtg 1850

cagagccctc atgattagga ttagtgccct tatttaaaaa ggccccagag 1900

agctaactca cccttccacc atatgaggac gtggcaagaa gatgacatgt 1950

atgagaacca aaaaacagct gtcgccaaac accgactctg tcgttgcctt 2000

gatcttgaac ttccagcctc cagaactatg agaaataaaa ttctggttgt 2050

ttgtagccta a 2061
```

<210> 53
<211> 1312
<212> DNA
<213> Homo sapien

<400> 53
```
caccatgcct gggggggtgct cccggggccc cgccgccggg gacgggcgtc 50

tgcggctggc gcgactagcg ctggtactcc tgggctgggt ctcctcgtct 100

tctcccacct cctcggcatc ctccttctcc tcctcggcgc cgttcctggc 150
```

93

```
ttccgccgtg tccgcccagc ccccgctgcc ggaccagtgc cccgcgctgt 200

gcgagtgctc cgaggcagcg cgcacagtca agtgcgttaa ccgcaatctg 250

accgaggtgc ccacggacct gcccgcctac gtgcgcaacc tcttccttac 300

cggcaaccag ctggccgtgc tccctgccgg cgccttcgcc cgccggccgc 350

cgctggcgga gctggccgcg ctcaacctca gcggcagccg cctggacgag 400

gtgcgcgcgg gcgccttcga gcatctgccc agcctgcgcc agctcgacct 450

cagccacaac ccactggccg acctcagtcc cttcgctttc tcgggcagca 500

atgccagcgt ctcggccccc agtccccttg tggaactgat cctgaaccac 550

atcgtgcccc ctgaagatga gcggcagaac cggagcttcg agggcatggt 600

ggtggcggcc ctgctggcgg gccgtgcact gcaggggctc cgccgcttgg 650

agctggccag caaccacttc ctttacctgc cgcgggatgt gctggcccaa 700

ctgcccagcc tcaggcacct ggacttaagt aataattcgc tggtgagcct 750

gacctacgtg tccttccgca acctgacaca tctagaaagc ctccacctgg 800

aggacaatgc cctcaaggtc cttcacaatg gcaccctggc tgagttgcaa 850

ggtctacccc acattagggt tttcctggac aacaatccct gggtctgcga 900

ctgccacatg gcagacatgg tgacctggct caaggaaaca gaggtagtgc 950

agggcaaaga ccggctcacc tgtgcatatc cggaaaaaat gaggaatcgg 1000

gtcctcttgg aactcaacag tgctgacctg gactgtgacc cgattcttcc 1050

cccatccctg caaacctctt atgtcttcct gggtattgtt ttagccctga 1100

taggcgctat tttcctcctg gttttgtatt tgaaccgcaa ggggataaaa 1150

aagtggatgc ataacatcag agatgcctgc agggatcaca tggaagggta 1200

tcattacaga tatgaaatca atgcggaccc cagattaaca aacctcagtt 1250

ctaactcgga tgtctgagaa atattagagg acagaccaag gacaactctg 1300

catgagatgt ag 1312
```

<210> 54
<211> 1528
<212> DNA
<213> Homo sapien

<400> 54
```
cggcgagcga gcaccttcga cgcggtccgg ggaccccctc gtcgctgtcc 50

tcccgacgcg gacccgcgtg ccccaggcct cgcgctgccc ggccggctcc 100
```

94

```
tcgtgtccca ctcccggcgc acgccctccc gcgagtcccg ggcccctccc 150

gcgcccctct tctcggcgcg cgcgcagcat ggcgcccccg caggtcctcg 200

cgttcgggct tctgcttgcc gcggcgacgg cgactttgc cgcagctcag 250

gaagaatgtg tctgtgaaaa ctacaagctg gccgtaaact gctttgtgaa 300

taataatcgt caatgccagt gtacttcagt tggtgcacaa aatactgtca 350

tttgctcaaa gctggctgcc aaatgtttgg tgatgaaggc agaaatgaat 400

ggctcaaaac ttgggagaag agcaaaacct gaaggggccc tccagaacaa 450

tgatgggctt tatgatcctg actgcgatga gagcgggctc tttaaggcca 500

agcagtgcaa cggcacctcc acgtgctggt gtgtgaacac tgctggggtc 550

agaagaacag acaaggacac tgaaataacc tgctctgagc gagtgagaac 600

ctactggatc atcattgaac taaaacacaa agcaagagaa aaaccttatg 650

atagtaaaag tttgcggact gcacttcaga aggagatcac aacgcgttat 700

caactggatc caaaatttat cacgagtatt ttgtatgaga ataatgttat 750

cactattgat ctggttcaaa attcttctca aaaaactcag aatgatgtgg 800

acatagctga tgtggcttat tattttgaaa aagatgttaa aggtgaatcc 850

ttgtttcatt ctaagaaaat ggacctgaca gtaaatgggg aacaactgga 900

tctggatcct ggtcaaactt taatttatta tgttgatgaa aaagcacctg 950

aattctcaat gcagggtcta aaagctggtg ttattgctgt tattgtggtt 1000

gtggtgatag cagttgttgc tggaattgtt gtgctggtta tttccagaaa 1050

gaagagaatg gcaaagtatg agaaggctga gataaaggag atgggtgaga 1100

tgcataggga actcaatgca taactatata atttgaagat tatagaagaa 1150

gggaaatagc aaatggacac aaattacaaa tgtgtgtgcg tgggacgaag 1200

acatctttga aggtcatgag tttgttagtt taacatcata tatttgtaat 1250

agtgaaacct gtactcaaaa tataagcagc ttgaaactgg ctttaccaat 1300

cttgaaattt gaccacaagt gtcttatata tgcagatcta atgtaaaatc 1350

cagaacttgg actccatcgt taaaattatt tatgtgtaac attcaaatgt 1400

gtgcattaaa tatgcttcca cagtaaaatc tgaaaaactg atttgtgatt 1450

gaaagctgcc tttctatttta cttgagtctt gtacatacat actttttat 1500

gagctatgaa ataaaacatt ttaaactg 1528
```

<210> 55
<211> 4725
<212> DNA
<213> Homo sapien

<400> 55
caattcggcc tcgctccttg tgattgcgct aaaccttccg tcctcagctg 50

agaacgctcc accacctccc cggatcgctc atctcttggc tgccctccca 100

ctgttcctga tgttattttta ctccccgtat cccctactcg ttcttcacaa 150

ttctgtaggt gagtggttcc agctggtgcc tggcctgtgt ctcttggatg 200

ccctgtggct tcagtccgtc tcctgttgcc caccacctcg tccctgggcc 250

gcctgatacc ccagcccaac agctaaggtg tggatggaca gtaggggct 300

ggcttctctc actggtcagg ggtcttctcc cctgtctgcc tcccggagct 350

aggactgcag aggggcctat catggtgctt gcaggccccc tggctgtctc 400

gctgttgctg cccagcctca cactgctggt gtcccacctc tccagctccc 450

aggatgtctc cagtgagccc agcagtgagc agcagctgtg cgcccttagc 500

aagcacccca ccgtggcctt tgaagacctg cagccgtggg tctctaactt 550

cacctaccct ggagcccggg atttctccca gctggctttg gacccctccg 600

ggaaccagct catcgtggga gccaggaact acctcttcag actcagcctt 650

gccaatgtct ctcttcttca ggccacagag tgggcctcca gtgaggacac 700

gcgccgctcc tgccaaagca aagggaagac tgaggaggag tgtcagaact 750

acgtgcgagt cctgatcgtc gccggccgga aggtgttcat gtgtggaacc 800

aatgcctttt cccccatgtg caccagcaga caggtgggga acctcagccg 850

gactattgag aagatcaatg gtgtggcccg ctgcccctat gacccacgcc 900

acaactccac agctgtcatc tcctcccagg gggagctcta tgcagccacg 950

gtcatcgact tctcaggtcg ggaccctgcc atctaccgca gcctgggcag 1000

tgggccaccg cttcgcactg cccaatataa ctccaagtgg cttaatgagc 1050

caaacttcgt ggcagcctat gatattgggc tgtttgcata cttcttcctg 1100

cgggagaacg cagtggagca cgactgtgga cgcaccgtgt actctcgcgt 1150

ggcccgcgtg tgcaagaatg acgtggggg ccgattcctg ctggaggaca 1200

catggaccac attcatgaag gcccggctca actgctcccg cccgggcgag 1250

gtccccttct actataacga gctgcagagt gccttccact tgccggagca 1300

96

```
ggacctcatc tatggagttt tcacaaccaa cgtaaacagc atcgcggctt 1350

ctgctgtctg cgccttcaac ctcagtgcta tctcccaggc tttcaatggc 1400

ccatttcgct accaggagaa ccccagggct gcctggctcc ccatagccaa 1450

ccccatcccc aatttccagt gtggcaccct gcctgagacc ggtcccaacg 1500

agaacctgac ggagcgcagc ctgcaggacg cgcagcgcct cttcctgatg 1550

agcgaggccg tgcagccggt gacacccgag ccctgtgtca cccaggacag 1600

cgtgcgcttc tcacacctcg tggtggacct ggtgcaggct aaagacacgc 1650

tctaccatgt actctacatt ggcaccgagt cgggcaccat cctgaaggcg 1700

ctgtccacgg cgagccgcag cctccacggc tgctacctgg aggagctgca 1750

cgtgctgccc cccgggcgcc gcgagcccct gcgcagcctg cgcatcctgc 1800

acagcgcccg cgcgctcttc gtggggctga gagacggcgt cctgcgggtc 1850

ccactggaga ggtgcgccgc ctaccgcagc caggggggcat gcctgggggc 1900

ccgggacccg tactgtggct gggacgggaa gcagcaacgt tgcagcacac 1950

tcgaggacag ctccaacatg agcctctgga cccagaacat caccgcctgt 2000

cctgtgcgga atgtgacacg ggatgggggc ttcggcccat ggtcaccatg 2050

gcaaccatgt gagcacttgg atggggacaa ctcaggctct tgcctgtgtc 2100

gagctcgatc ctgtgattcc cctcgacccc gctgtggggg ccttgactgc 2150

ctggggccag ccatccacat cgccaactgc tccaggaatg gggcgtggac 2200

cccgtggtca tcgtgggcgc tgtgcagcac gtcctgtggc atcggcttcc 2250

aggtccgcca gcgaagttgc agcaaccctg ctccccgcca cgggggccgc 2300

atcttcgtgg gcaagagccg ggaggaacgg ttctgtaatg agaacacgcc 2350

ttgcccggtg cccatcttct gggcttcctg gggctcctgg agcaagtgca 2400

gcagcaactg tggagggggc atgcagtcgc ggcgtcgggc ctgcgagaac 2450

ggcaactcct gcctgggctg cggcgagttc aagacgtgca accccgaggg 2500

ctgccccgaa gtgcggcgca acaccccctg gacgccgtgg ctgcccgtga 2550

acgtgacgca gggcgggggca cggcaggagc agcggttccg cttcacctgc 2600

cgcgcgcccc ttgcagaccc gcacggcctg cagttcggca ggagaaggac 2650

cgagacgagg acctgtcccg cggacggctc cggctcctgc gacaccgacg 2700

ccctggtgga ggtcctcctg cgcagcggga gcacctcccc gcacacggtg 2750
```

97

```
agcggggggct gggccgcctg gggcccgtgg tcgtcctgct cccgggactg 2800

cgagctgggc ttccgcgtcc gcaagagaac gtgcactaac ccggagcccc 2850

gcaacggggg cctgccctgc gtgggcgatg ctgccgagta ccaggactgc 2900

aaccccagg cttgcccagt tcggggtgct tggtcctgct ggacctcatg 2950

gtctccatgc tcagcttcct gtggtggggg tcactatcaa cgcacccgtt 3000

cctgcaccag ccccgcaccc tccccaggtg aggacatctg tctcgggctg 3050

cacacggagg aggcactatg tgccacacag gcctgcccag gctggtcgcc 3100

ctggtctgag tggagtaagt gcactgacga cggagcccag agccgaagcc 3150

ggcactgtga ggagctcctc ccagggtcca gcgcctgtgc tggaaacagc 3200

agccagagcc gcccctgccc ctacagcgag attcccgtca tcctgccagc 3250

ctccagcatg gaggaggcca ccgactgtgc aggtaaaaga aaccggacct 3300

acctcatgct gcggtcctcc cagccctcca gcaccccact ccaaagtctg 3350

gactctttcc acatcctgct ccagacagcc aagctttgtt ggggtcccca 3400

ctgctttgag atgggttcaa tctcatccac ttggtggcca cgggcatctc 3450

ctgcttcttg ggctctgggc tcctgaccct agcagtgtac ctgtcttgcc 3500

agcactgcca gcgtcagtcc caggagtcca cactggtcca tcctgccacc 3550

cccaaccatt tgcactacaa gggcggaggc accccgaaga atgaaaagta 3600

cacacccatg gaattcaaga ccctgaacaa gaataacttg atccctgatg 3650

acagagccaa cttctaccca ttgcagcaga ccaatgtgta cacgactact 3700

tactacccaa gcccctgaa caaacacagc ttccggcccg aggcctcacc 3750

tggacaacgg tgcttcccca acagctgata ccgccgtcct ggggacttgg 3800

gcttcttgcc ttcataaggc acagagcaga tggagatggg acagtggagc 3850

cagtttggtt ttctccctct gcactaggcc aagaacttgc tgccttgcct 3900

gtgggggggtc ccatccggct tcagagagct ctggctggca ttgaccatgg 3950

gggaaagggc tggtttcagg ctgacatatg gccgcaggtc cagttcagcc 4000

caggtctctc atggttatct tccaacccac tgtcacgctg acactatgct 4050

gccatgcctg ggctgtggac ctactgggca tttgaggaat tggagaatgg 4100

agatggcaag agggcaggct tttaagtttg ggttggagac aacttcctgt 4150

ggccccccaca agctgagtct ggccttctcc agctggcccc aaaaaaggcc 4200
```

98

```
tttgctacat cctgattatc tctgaaagta atcaatcaag tggctccagt 4250

agctctggat tttctgccag ggctgggcca ttgtggtgct gccccagtat 4300

gacatgggac caaggccagc gcaggttatc cacctctgcc tggaagtcta 4350

tactctaccc agggcatccc tctggtcaga ggcagtgagt actgggaact 4400

ggaggctgac ctgtgcttag aagtccttta atctgggctg gtacaggcct 4450

cagccttgcc ctcaatgcac gaaaggtggc ccaggagaga ggatcaatgc 4500

cataggaggc agaagtctgg cctctgtgcc tctatggaga ctatcttcca 4550

gttgctgctc aacagagttg ttggctgaga cctgcttggg agtctctgct 4600

ggcccttcat ctgttcagga acacacacac acacacactc acacacgcac 4650

acacaatcac aatttgctac agcaacaaaa aagacattgg gctgtggcat 4700

tattaattaa agatgatatc cagtc 4725
```

<210> 56
<211> 2018
<212> DNA
<213> Homo sapien

<400> 56
```
cgcagaaaga ggaggcgctt gccttcagct tgtgggaaat cccgaagatg 50

gccaaagaca actcaactgt tcgttgcttc cagggcctgc tgatttttgg 100

aaatgtgatt attggttgtt gcggcattgc cctgactgcg gagtgcatct 150

tctttgtatc tgaccaacac agcctctacc cactgcttga agccaccgac 200

aacgatgaca tctatggggc tgcctggatc ggcatatttg tgggcatctg 250

cctcttctgc ctgtctgttc taggcattgt aggcatcatg aagtccagca 300

ggaaaattct tctggcgtat ttcattctga tgtttatagt atatgccttt 350

gaagtggcat cttgtatcac agcagcaaca caacaagact ttttcacacc 400

caacctcttc ctgaagcaga tgctagagag gtaccaaaac aacagccctc 450

caaacaatga tgaccagtgg aaaaacaatg gagtcaccaa aacctgggac 500

aggctcatgc tccaggacaa ttgctgtggc gtaaatggtc catcagactg 550

gcaaaaatac acatctgcct tccggactga gaataatgat gctgactatc 600

cctggcctcg tcaatgctgt gttatgaaca atcttaaaga acctctcaac 650

ctggaggctt gtaaactagg cgtgcctggt ttttatcaca atcagggctg 700

ctatgaactg atctctggtc caatgaaccg acacgcctgg ggggttgcct 750
```

99

```
ggtttggatt tgccattctc tgctggactt tttgggttct cctgggtacc 800

atgttctact ggagcagaat tgaatattaa gcataaagtg ttgccaccat 850

acctccttcc ccgagtgact ctggatttgg tgctggaacc agctctctcc 900

taatattcca cgtttgtgcc ccacactaac gtgtgtgtct tacattgcca 950

agtcagatgg tacggacttc ctttaggatc tcaggcttct gcagttctca 1000

tgactcctac ttttcatcct agtctagcat tctgcaacat ttatatagac 1050

tgttgaaagg agaatttgaa aaatgcataa taactacttc catccctgct 1100

tatttttaat ttgggaaaat aaatacattc gaaggaacct gtgttatcac 1150

agtaacccag agctgtattt ggctagcaat ctgcctgtat ctctcactat 1200

tatctaaaag aaaccttcca atgcttctgt tgatctcagt attgtcaggg 1250

gaacagagaa gttgggaaaa gattactgaa atataccttt tgcatttctt 1300

tctagagtag ctcccatata tggagatggg tgattctctt gatgccacct 1350

tcagatcctt ttattctcca gaataattct taacagtggt tcaaatttcc 1400

tttcatacct tgaagtatgt gtttagtagc ctcaattctc cattaattaa 1450

aagtgtgggc tgggcgtggg ggctcatgcc tgtaatccca gcactttggg 1500

aggccgaggt gggcagatca cctgaggtca ggagttcaag accagcctgg 1550

ccaacatggt gaaaccccgt ctctacaaaa atacaaaaat tagccaggcg 1600

tgatggcagg tgcctgtaat cctagctact tggcaggcta acgcaggaga 1650

atcacttgac cgggagacag aggttgcagt gagctgagat cgtacctatt 1700

gcactccatc ctggatgaaa gagccagact ctgtctcaaa acaaacaaaa 1750

aagcgtgggg acttctgggg acagacaagg tgcctgttat atatttactc 1800

agtctttgcc ctgaatggtc tcagcttgag accatttcaa actggagaga 1850

agcaagccag ccaatagaat ggggtgattt acagggattt ctgtttactg 1900

tcaaaatatt tctcatctgc actatgtttc catttgtggt cctgaaggaa 1950

attcttataa ctcaacattt gtctggtctt ataagtaaag acagctttaa 2000

aatctgttca ctttcaaa 2018
```

<210> 57
<211> 1043
<212> DNA
<213> Homo sapien

<400> 57

```
cccggcccgg gctcgagaat caagggcctc ggccgccgtc ccgcagctca 50

gtccatcgcc cttgccgggc agcccgggca gagaccatgt ttgacaagac 100

gcggctgccg tacgtggccc tcgatgtgct ctgcgtgttg ctggctggat 150

tgccttttgc aattttact tcaaggcata ttacttcaag gcatacccccc 200

ttccaacgag gagtattctg taatgatgag tccatcaagt acccttacaa 250

agaagacacc ataccttatg cgttattagg tggaataatc attccattca 300

gtattatcgt tattattctt ggagaaaccc tgtctgttta ctgtaacctt 350

ttgcactcaa attcctttat caggaataac tacatagcca ctatttacaa 400

agccattgga acctttttat ttggtgcagc tgctagtcag tccctgactg 450

acattgccaa gtattcaata ggcagactgc ggcctcactt cttggatgtt 500

tgtgatccag attggtcaaa aatcaactgc agcgatggtt acattgaata 550

ctacatatgt cgagggaatg cagaaagagt taaggaaggc aggttgtcct 600

tctattcagg ccactcttcg ttttccatgt actgcatgct gtttgtggca 650

ctttatcttc aagccaggat gaagggagac tgggcaagac tcttacgccc 700

cacactgcaa tttggtcttg ttgccgtatc catttatgtg ggcctttctc 750

gagtttctga ttataaacac cactggagcg atgtgttgac tggactcatt 800

cagggagctc tggttgcaat attagttgct gtatatgtat cggatttctt 850

caaagaaaga acttctttta aagaaagaaa agaggaggac tctcatacaa 900

ctctgcatga aacaccaaca actgggaatc actatccgag caatcaccag 950

ccttgaaagg cagcagggtg cccaggtgaa gctggcctgt tttctaaagg 1000

aaaatgattg ccacaaggca agaggatgca tctttcttcc tgg 1043
```

<210> 58
<211> 2970
<212> DNA
<213> Homo sapien

<400> 58
```
agtgaagggg tttcccatat gaaaaataca gaaagaatta tttgaatact 50

agcaaataca caacttgata tttctagaga acccaggcac agtcttggag 100

acattactcc tgagagactg cagctgatgg aagatgagcc ccaacttcta 150

aaaatgtatc actaccggga ttgagataca aacagcattt aggaaggtct 200

catctgagta gcagcttcct gccctccttc ttggagataa gtcgggcttt 250
```

```
tggtgagaca gactttccca accctctgcc cggccggtgc ccatgcttct 300

gtggctgctg ctgctgatcc tgactcctgg aagagaacaa tcaggggtgg 350

ccccaaaagc tgtacttctc ctcaatcctc catggtccac agccttcaaa 400

ggagaaaaag tggctctcat atgcagcagc atatcacatt ccctagccca 450

gggagacaca tattggtatc acgatgagaa gttgttgaaa ataaaacatg 500

acaagatcca aattacagag cctggaaatt accaatgtaa gacccgagga 550

tcctccctca gtgatgccgt gcatgtggaa ttttcacctg actggctgat 600

cctgcaggct ttacatcctg tctttgaagg agacaatgtc attctgagat 650

gtcaggggaa agacaacaaa aacactcatc aaaaggttta ctacaaggat 700

ggaaaacagc ttcctaatag ttataattta gagaagatca cagtgaattc 750

agtctccagg gataatagca aatatcattg tactgcttat aggaagtttt 800

acatacttga cattgaagta acttcaaaac ccctaaatat ccaagttcaa 850

gagctgtttc tacatcctgt gctgagagcc agctcttcca cgcccataga 900

ggggagtccc atgaccctga cctgtgagac ccagctctct ccacagaggc 950

cagatgtcca gctgcaattc tccctcttca gagatagcca gaccctcgga 1000

ttgggctgga gcaggtcccc cagactccag atccctgcca tgtggactga 1050

agactcaggg tcttactggt gtgaggtgga gacagtgact cacagcatca 1100

aaaaaaggag cctgagatct cagatacgtg tacagagagt ccctgtgtct 1150

aatgtgaatc tagagatccg gcccaccgga gggcagctga ttgaaggaga 1200

aaatatggtc cttatttgct cagtagccca gggttcaggg actgtcacat 1250

tctcctggca caaagaagga agagtaagaa gcctgggtag aaagacccag 1300

cgttccctgt tggcagagct gcatgttctc accgtgaagg agagtgatgc 1350

agggagatac tactgtgcag ctgataacgt tcacagcccc atcctcagca 1400

cgtggattcg agtcaccgtg agaattccgg tatctcaccc tgtcctcacc 1450

ttcagggctc ccagggccca cactgtggtg ggggacctgc tggagcttca 1500

ctgtgagtcc ctgagaggct ctcccccgat cctgtaccga ttttatcatg 1550

aggatgtcac cctggggaac agctcagccc cctctggagg aggagcctcc 1600

ttcaacctct ctctgactgc agaacattct ggaaactact cctgtgatgc 1650

agacaatggc ctggggcccc agcacagtca tggagtgagt ctcagggtca 1700
```

```
cagttccggt gtctcgcccc gtcctcaccc tcagggctcc cggggcccag 1750

gctgtggtgg gggacctgct ggagcttcac tgtgagtccc tgagaggctc 1800

cttcccgatc ctgtactggt tttatcacga ggatgacacc ttggggaaca 1850

tctcggccca ctctggagga ggggcatcct tcaacctctc tctgactaca 1900

gaacattctg gaaactactc atgtgaggct gacaatggcc tggggcccca 1950

gcacagtaaa gtggtgacac tcaatgttac aggaacttcc aggaacagaa 2000

caggccttac cgctgcggga atcacggggc tggtgctcag catcctcgtc 2050

cttgctgctg ctgctgctct gctgcattac gccagggccc gaaggaaacc 2100

aggaggactt tctgccactg gaacatctag tcacagtcct agtgagtgtc 2150

aggagccttc ctcgtccagg ccttccagga tagaccctca agagcccact 2200

cactctaaac cactagcccc aatggagctg gagccaatgt acagcaatgt 2250

aaatcctgga gatagcaacc cgatttattc ccagatctgg agcatccagc 2300

atacaaaaga aaactcagct aattgtccaa tgatgcatca agagcatgag 2350

gaacttacag tcctctattc agaactgaag aagacacacc cagacgactc 2400

tgcaggggag gctagcagca gaggcagggc ccatgaagaa gatgatgaag 2450

aaaactatga gaatgtacca cgtgtattac tggcctcaga ccactagccc 2500

cttacccaga gtggcccaca ggaaacagcc tgcaccattt tttttctgt 2550

tctctccaac cacacatcat ccatctctcc agactctgcc tcctacgagg 2600

ctgggctgca gggtatgtga ggctgagcaa aaggtctgca aatctcccct 2650

gtgcctgatc tgtgtgttcc ccaggaagag agcaggcagc ctctgagcaa 2700

gcactgtgtt attttcacag tggagacacg tggcaaggca ggagggccct 2750

cagctcctag ggctgtcgaa tagaggagga gagagaaatg gtctagccag 2800

ggttacaagg gcacaatcat gaccatttga tccaagtgtg atcgaaagct 2850

gttaatgtgc tctctgtata aacaatttgc tccaaatatt ttgtttccct 2900

tttttgtgtg gctggtagtg gcattgctga tgttttggtg tatatgctgt 2950

atccttgcta ccatattggg 2970
```

<210> 59
<211> 2732
<212> DNA
<213> Homo sapien

<400> 59

103

```
ggagccgcgc cgcatctcag gcgcagtctc tagggggctgt gcgcatccta 50

ggggggggaca tgtgcatctc aggggggctg ctcgcatctg ggggtgctg 100

tgtgcatctc ggggggctg ttgcatctac gcgggtggc tgtgtccgca 150

tctggagggg gctgtgcgca acccggggg ggtgttgcgc gcatctagca 200

ggggcggctg tgcgcatttc ggggggggc tgtgcatatc tggggggaca 250

cgtgcttatc tctgggggcg gctgtgcgca tcttgagggg tgtgtacatc 300

tcggggggcc tgtgcatctt ggggggctgt gtgcatccgc ggggctgtg 350

cgcatctcgg ggtgctgtgc gctgctcctc tgagctctgc tctttcttgc 400

agcgtttgcc tcagccatgg agggcggggc cgcggcagcc accccacag 450

cactgcctta ctacgtggcc ttctcccagc tgctgggcct gaccttggtg 500

gccatgaccg gcgcgtggct cgggctgtac cgaggcggca ttgcctggga 550

gagcgacctg cagttcaacg cgcacccccct ctgcatggtc ataggcctga 600

tcttcctgca gggaaatgcc ctgctggttt accgtgtctt caggaacgaa 650

gctaaacgca ccaccaaggt cctgcacggg ctgctgcaca tctttgcgct 700

cgtcatcgcc ctggttggct tggtggcggt gttcgactac cacaggaaga 750

agggctacgc tgacctgtac agcctacaca gctggtgcgg gatccttgtc 800

tttgtcctgt actttgtgca gtggctggtg ggcttcagct tcttcctgtt 850

ccccggagct tcattctccc tgcggagccg ctaccgccca cagcacatct 900

tctttggtgc taccatcttc ctccttcccg tgggcaccgc cctgctgggc 950

ctgaaggagg cactgctgtt caacctcggg ggcaagtata gcgcatttga 1000

gcccgagggt gtcctggcca acgtgctggg cctgctgctg gcctgcttcg 1050

gtggggcggt gctctacatc ttgacccggg ccgactggaa gcggccttcc 1100

caggcggaag agcaggccct ctccatggac ttcaagacgc tgaggcaggg 1150

agatagcccc ggctcccagt gatgcgcccg gccggccctg ggggttcgcg 1200

gggtgtcttc ttgcctgccc ctgctgaggc gtcttcagga ctgcaggctc 1250

cggagagtgg ctctggcagc aggcgggcgc gtgggtgcag ggggatccgt 1300

ttgatgcgtc gtttctgggg caggtctccg cctcctctgc ttctcgtttc 1350

tccgctgcta tagaccagtt cattgtgtgt ggctcccgtg tctctgttgc 1400

ccccttcagt gcagaaggct ttgggtagac ttcgggtgtt cggtcctggt 1450
```

```
cgcagagcac agatctttaa agaagcgtta gagaggtagg ttctaccctc 1500

ttggtagtag atgcctgggg caaggcccag gggaaactgg gggggcctca 1550

gggacaggcc tggaaaggcc acgatggcct gctgaattca aacaaggagt 1600

ccctccagcc tgaataacac gtggcacaaa tgggcccggc ctttggcaga 1650

ggagcaagtg atatgatgtg taaagtatgt tggtggtgaa agcaaggttc 1700

cccaggagag gggagggact ggcccctggg aagctgtgag atgaggctgt 1750

ggcccagctg tagtcctgac cttactcttc tttaaaaccc tttagcccta 1800

ggatggcttt ggtgggagag gggatagaag cccatgactt cagacagact 1850

ttctcttggc agatgcaggc aggcctcctc ccaggctgct ccagacatgg 1900

gggttgggga tggggggtac cttgcagccc cttcctgctg gggctccctc 1950

cttgtagcac ccccttgcgg ctcagctctg gtttcctctc ccaggctcac 2000

ccaggctctg ctcaggctgg gaggcagagg gcacaaacct tataattttt 2050

taaatgaaaa accgctgctg ctggctgtgg ctagagcccc ctggggctgc 2100

tggagctgct gcctctgttc tggaggacga gccttctcct tatctgctgc 2150

ccatctttcc aggaagtcag gatggagtca gacaactaac gatcatcccc 2200

cgtgggtgtc tgcacatcac tccagcccca taaagagtgt catgttagct 2250

gagtcaccat ttggcttcgg cctggaaata gtgtgttaga acactgatcg 2300

tgtgcgaggc caggagatca agaccatcct gactaacaaa cacagtgaaa 2350

ccccgtctct actaaaaata caaaaaaatt agccaggcgt ggtggtgggc 2400

gcctgtagtc ccagctactt gggagacagg tctctacgga attccctgta 2450

ttagtctata tggttctcca agaaactgaa tgaatccatt ggagaagcgg 2500

tggataacta gccacgacaa aatttgagaa tacataaaca acgcattccg 2550

caggaaacat acagaggatg cctttctgt gattgggtgg gattttttcc 2600

cttttatgt ggatatagta gttacttgtg acaagaataa ttttggaata 2650

atttctatta atatcaactc tgaagctaat tgtacataat ctcgagattg 2700

tgtttgttca taataaaagt gaagtgaatg tg 2732
```

<210> 60
<211> 2165
<212> DNA
<213> Homo sapien

<400> 60

105

```
cgccaccgct gggtgcggcg aggccggcgc gatgcggcag ctgtgccggg 50

gccgcgtgct gggcatctcg gtggccatcg cgcacggggt cttctcgggc 100

tccctcaaca tcttgctcaa gttcctcatc agccgctacc agttctcctt 150

cctgaccctg gtgcagtgcc tgaccagctc caccgcggcg ctgagcctgg 200

agctgctgcg gcgcctcggg ctcatcgccg tgccccccctt cggtctgagc 250

ctggcgcgct ccttcgcggg ggtcgcggtg ctctccacgc tgcagtccag 300

cctcacgctc tggtccctgc gcggcctcag cctgcccatg tacgtggtct 350

tcaagcgctg cctgcccctg gtcaccatgc tcatcggcgt cctggtgctc 400

aagaacggcg cgccctcgcc aggggtgctg gcggcggtgc tcatcaccac 450

ctgcggcgcc gccctggcag gagccggcga cctgacgggc gaccccatcg 500

ggtacgtcac gggagtgctg gcggtgctgg tgcacgctgc ctacctggtg 550

ctcatccaga aggccagcgc agacaccgag cacgggccgc tcaccgcgca 600

gtacgtcatc gccgtctctg ccaccccgct gctggtcatc tgctccttcg 650

ccagcaccga ctccatccac gcctggacct tcccgggctg gaaggacccg 700

gccatggtct gcatcttcgt ggcctgcatc ctgatcggct gcgccatgaa 750

cttcaccacg ctgcactgca cctacatcaa ttcggccgtg accacctctc 800

tgttcattgc cggcgtggtg gtgaacaccc tgggctctat catttactgt 850

gtggccaagt tcatggagac cagaaagcaa agcaactacg aggacctgga 900

ggcccagcct cggggagagg aggcgcagct aagtggagac cagctgccgt 950

tcgtgatgga ggagctgccc ggggagggag gaaatggccg gtcagaaggt 1000

ggggaggcag caggtggccc cgctcaggag agcaggcaag aggtcagggg 1050

cagcccccga ggagtcccgc tggtggctgg gagctctgaa gaagggagca 1100

ggaggtcgtt aaaagatgct tacctcgagg tatggaggtt ggttagggga 1150

accaggtata tgaagaagga ttatttgata gaaaacgagg agttacccag 1200

tccttgagaa ggaggtgcat gtacgtacct atgtgcatac acttatttta 1250

tatgttagaa atgacgtgtt ttaatgagag gcctccccgt tttattcttt 1300

gaggagtggg gaagggaaga aaagaaagaa gctgaaaggt actgacacag 1350

agcaacaaaa ttagcacctg tgtgaattat ttagtgtgac ttcacctgag 1400

gcatcacaga gacaaaagaa tgtgaagcta cttaacaaag taaggcaacg 1450
```

```
tttctgcttc agactcctgg cacatttact ttttgtcatt ataaccataa 1500

ctaaatatct gcatgtacca agagtcccta agccaccccc tccaaagatg 1550

gagtgtagaa atgatgacag cacttagtaa gttcaaagat gacattcagg 1600

gatgcatttt ttgatgatag aactacagtt tttatcgcca gctgggcaaa 1650

gagtatattg ctgaaatgat atataaatat attgaattga tgtttactgt 1700

ttatagtcat ctgaaatatc atatttactc tgattctact cacttgtttt 1750

ttaaaaataa gtgtcctact attgtattat atattgatag aaactgttaa 1800

agctattttg aaaatatgag ttcttagctt taatcatgaa gtctgaagtt 1850

tgctttcagt aattatttta aaagttgttt tggttcattg ctttataata 1900

tttattattg aatgccaaac ctgttctttt ttttactgtg tccaatattc 1950

tttcaagcaa atgcaatggc tggaatataa ttcagaatta actgaaaccc 2000

agccagaaga gggaccacct gtaaagcaag tcctttcaag tttcactgca 2050

catcccaaac catgttacaa aaagagcaac tgctatattc acattatgat 2100

attttctat cttaaatttg tcaaaataaa gtatgagtct aactattaaa 2150

aaaaaaaaaa aaaaa 2165
```

<210> 61
<211> 424
<212> DNA
<213> Homo sapien

<400> 61
```
atttctccag gagaactcca cacttgcaca atatcttctc caaggacaga 50

agagggacaa tatttgtcct tcctactgga ttttgaaacc ctttgcactg 100

agtgtagact gtagttctgt gacataccat gaagagtgtg tgtgtgtttt 150

aagggagcta ctgtcttacc caaaacctgt gaatataaag tgttttttca 200

tgaattgctc attattcagc cagtcgttaa tgaattcatt caacaagtgt 250

ctctgagatg ctagacactg gggattaaaa gaggaacaac agagacaaga 300

tctctgccct ccagaaactg acagtctatt gaatgagaca gttgtctaac 350

aatcacaatc aagtgtgatc aatctctggt gacaggactc taacctagag 400

gcatgtgcct aatctggggt gact 424
```

<210> 62
<211> 1270
<212> DNA
<213> Homo sapien

<400> 62

```
cagggggacag gctgcagccg gtgcagttac acgttttcct ccaaggagcc 50

tcggacgttg tcacgggttt ggggtcgggg acagagcagt gaccatggcc 100

aggctggcgt tgtctcctgt gcccagccac tggatggtgg cgttgctgct 150

gctgctctca gctgagccag taccagcagc cagatcggag gaccggtacc 200

ggaatcccaa aggtagtgct tgttcgcgga tctggcagag cccacgtttc 250

atagccagga aacgggggctt cacggtgaaa atgcactgct acatgaacag 300

cgcctccggc aatgtgagct ggctctggaa gcaggagatg gacgagaatc 350

cccagcagct gaagctggaa aagggccgca tggaagagtc ccagaacgaa 400

tctctcgcca ccctcaccat ccaaggcatc cggtttgagg acaatggcat 450

ctacttctgt cagcagaagt gcaacaacac ctcggaggtc taccagggct 500

gcggcacaga gctgcgagtc atgggattca gcaccttggc acagctgaag 550

cagaggaaca cgctgaagga tggtatcatc atgatccaga cgctgctgat 600

catcctcttc atcatcgtgc ctatcttcct gctgctggac aaggatgaca 650

gcaaggctgg catggaggaa gatcacacct acgagggcct ggacattgac 700

cagacagcca cctatgagga catagtgacg ctgcggacag gggaagtgaa 750

gtggtctgta ggtgagcacc caggccagga gtgagagcca ggtcgcccca 800

tgacctgggt gcaggctccc tggcctcagt gactgcttcg gagctgcctg 850

gctcatggcc caacccottt cctggacccc ccagctggcc tctgaagctg 900

gcccaccaga gctgccattt gtctccagcc cctggtcccc agctcttgcc 950

aaagggcctg gagtagaagg acaacagggc agcaacttgg agggagttct 1000

ctggggatgg acgggacccca gccttctggg ggtgctatga ggtgatccgt 1050

ccccacacat gggatggggg aggcagagac tggtccagag cccgcaaatg 1100

gactcggagc cgagggcctc ccagcagagc ttgggaaggg ccatggaccc 1150

aactgggccc cagaagagcc acaggaacat cattcctctc ccgcaaccac 1200

tcccacccca gggaggccct ggcctccagt gccttccccc gtggaataaa 1250

cggtgtgtcc tgagaaacca 1270
```

<210> 63
<211> 2549
<212> DNA
<213> Homo sapien

108

<400> 63
atgggcctcc ccgagccggg ccctctccgg cttctggcgc tgctgctgct 50

gctgctgctg ctgctgctgc tgcggctcca gcatcttgcg gcggcagcgg 100

ctgatccgct gctcggcggc caagggccgg ccaaggagtg cgaaaaggac 150

caattccagt gccggaacga gcgctgcatc ccctctgtgt ggagatgcga 200

cgaggacgat gactgcttag accacagcga cgaggacgac tgccccaaga 250

agacctgtgc agacagtgac ttcacctgtg acaacggcca ctgcatccac 300

gaacggtgga agtgtgacgg cgaggaggag tgtcctgatg gctccgatga 350

gtccgaggcc acttgcacca agcaggtgtg tcctgcagag aagctgagct 400

gtggacccac cagccacaag tgtgtacctg cctcgtggcg ctgcgacggg 450

gagaaggact gcgagggtgg agcggatgag gccggctgtg ctacctcact 500

gggcacctgc cgtggggacg agttccagtg tggggatggg acatgtgtcc 550

ttgcaatcaa gcactgcaac caggagcagg actgtccaga tgggagtgat 600

gaagctggct gcctacaggg gctgaacgag tgtctgcaca caatggcgg 650

ctgctcacac atctgcactg acctcaagat tggctttgaa tgcacgtgcc 700

cagcaggctt ccagctcctg gaccagaaga cttgtggcga cattgatgag 750

tgcaaggacc agatgcctg cagccagatc tgtgtcaatt acaagggcta 800

ttttaagtgt gagtgctacc ctggctgcga gatggaccta ctgaccaaga 850

actgcaaggc tgctgctggc aagagcccat ccctaatctt caccaaccgc 900

acgagtgcgg aggatcgacc tgtgaagcgg aactattcac gcctcatccc 950

catgctcaag aatgtcgtgg cactagatgt ggaagttgcc accaatcgca 1000

tctactggtg tgacctctcc taccgtaaga tctatagcgc ctacatggac 1050

aaggccagtg acccgaaaga gcgggaggtc ctcattgacg agcagttgca 1100

ctctccagag ggcctggcag tggactgggt ccacaagcac atctactgga 1150

ctgactcggg caataagacc atctcagtgg ccacagttga tggtggccgc 1200

cgacgcactc tcttcagccg taacctcagt gaacccgggg ccatcgctgt 1250

tgaccccctg cgagggttca tgtattggtc tgactggggg gaccaggcca 1300

agattgagaa atctgggctc aacggtgtgg accggcaaac actggtgtca 1350

gacaatattg aatggcccaa cggaatcacc ctggatctgc tgagccagcg 1400

cttgtactgg gtagactcca agctacacca actgtccagc attgacttca 1450

109

```
gtggaggcaa cagaaagacg ctgatctcct ccactgactt cctgagccac 1500

ccttttggga tagctgtgtt tgaggacaag gtgttctgga cagacctgga 1550

gaacgaggcc attttcagtg caaatcggct caatggcctg gaaatctcca 1600

tcctggctga gaacctcaac aacccacatg acattgtcat cttccatgag 1650

ctgaagcagc caagagctcc agatgcctgt gagctgagtg tccagcctaa 1700

tggaggctgt gaatacctgt gccttcctgc tcctcagatc tccagccact 1750

ctcccaagta cacatgtgcc tgtcctgaca caatgtggct gggtccagac 1800

atgaagaggt gctaccgaga tgcaaatgaa gacagtaaga tgggctcaac 1850

agtcactgcc gctgttatcg ggatcatcgt gcccatagtg gtgatagccc 1900

tcctgtgcat gagtggatac ctgatctgga gaaactggaa gcggaagaac 1950

accaaaagca tgaattttga caacccagtc tacaggaaaa caacagaaga 2000

agaagatgaa gatgagctcc atatagggag aactgctcag attggccatg 2050

tctatcctgc acgagtggca ttaagccttg aagatgatgg actaccctga 2100

ggatgggatc accccttcg tgcctcatgg aattcagtcc catgcactac 2150

actccggatg gtgtatgact ggatgaatgg gtttctatat atgggtctgt 2200

gtgagtgtat gtgtgtgtgt gatttttttt tttaaattta tgttgcggaa 2250

aggtaaccac aaagttatga tgaactgcaa acatccaaag gatgtgagag 2300

tttttctatg tataatgttt tatacacttt ttaactggtt gcactaccca 2350

tgaggaattc gtggaatggc tactgctgac taacatgatg cacataacca 2400

aatggggggcc aatggcacag taccttactc atcatttaaa aactatattt 2450

acagaagatg tttggttgct gggggggctttt tttaggtttt gggcatttgt 2500

tttttgtaaa taagatgatt atgctttgtg gctatccatc aacataagt 2549
```

```
 ccgttccgcg ctctggcggc tcctcccggg cgatgcctcc gctctgggcc 50

 ctgctggccc tcggctgcct gcggttcggc tcggctgtga acctgcagcc 100

 ccaactggcc agtgtgactt tcgccaccaa caaccccaca cttaccactg 150

 tggccttgga aaagcctctc tgcatgtttg acagcaaaga ggccctcact 200
```

```
ggcacccacg aggtctacct gtatgtcctg gtcgactcag ccatttccag 250

gaatgcctca gtgcaagaca gcaccaacac cccactgggc tcaacgttcc 300

tacaaacaga gggtgggagg acaggtccct acaaagctgt ggcctttgac 350

ctgatcccct gcagtgacct gcccagcctg gatgccattg gggatgtgtc 400

caaggcctca cagatcctga atgcctacct ggtcagggtg ggtgccaacg 450

ggacctgcct gtgggatccc aacttccagg gcctctgtaa cgcacccctg 500

tcggcagcca cggagtacag gttcaagtat gtcctggtca atatgtccac 550

gggcttggta gaggaccaga ccctgtggtc ggaccccatc cgcaccaacc 600

agctcacccc atactcgacg atcgacacgt ggccaggccg gcggagcgga 650

ggcatgatcg tcatcacttc catcctgggc tccctgccct tctttctact 700

tgtgggtttt gctggcgcca ttgccctcag cctcgtggac atggggagtt 750

ctgatgggga aacgactcac gactcccaaa tcactcagga ggctgttccc 800

aagtcgctgg gggcctcgga gtcttcctac acgtccgtga accggggggcc 850

gccactggac agggctgagg tgtattccag caagctccaa gactgagccc 900

agcaccaccc ctgggcagca gcatcctcct ctctggcctt gccccaggcc 950

ctgcagcggt ggttgtcaca ccctgacttc agggaaggtg aaacagggct 1000

tgtccctcca actgcaggaa aacccttaat aaaatcttct gatgagttct 1050

aaaaaaaaaa 1059

<210> 65
<211> 1475
<212> DNA
<213> Homo sapien

<220>
<221> Unsure
<222> 1391, 1399, 1418, 1421, 1431, 1446, 1449, 1456, 1463, 1469
<223> Unknown base

<400> 65
 tctctgacca ccggtgcatg cagcccctgt cacataccgc ctgcttgctc 50

 aaatcaatca tgaccctttc atgtgaaatc tttagtattg tgagccctta 100

 aaagggacgg aaattgtgca tacgtggagc tcggattta aggcagtagc 150

 tgcccgatgc tcccagctga ataaagccct tccttctaca atttggtgtc 200

 tgagggggttt tgtctgcggc tcgtcctgct acatttcttg gttccctgac 250

 cgggaagcaa ggtgactgac agacggccga ggcagcccct taggcggctt 300
```

111

```
aagcctgccc tgtggagcat ccctgcgggg gactccggcc agcctgagtg 350

acgcgatcca aagagtgctc ccgggtagga aattgccccg gtggaacgcc 400

tcgccagagc agcgtgtagc aggcccccgc ggaggattaa cacagtggct 450

gaacaccggg aaggaactgg cacttggagt ccagacatct gaaacttgac 500

tgggagctgt acgtggatgg gagcagcttc accaacccct gcaaagtgac 550

tctgaagaag acgacaagcc ctgctccagt cacacccgga agctgactgg 600

tccacgcacg gccgaagcat gaggaaactc atcgcaggac tcattttct 650

taaattttgg acttatacag taagggcttc aactgacctt cctcagactg 700

agaactgttt ccagtatata catcaagtca ctgagatctc cagcaccctg 750

ccggtggcac tactgagaga cgaggtgcca gggtggttcc tgaaagtgcc 800

tgagccccaa cttatcagca aggagctcat catgctgaca gaagtcatgg 850

aggtctggca tggcttagtg atcgcggtgg tgtccctctt cctgcaggcc 900

tgcttcctca ccgccatcaa ctacctgctc agcaggcaca tggcccacaa 950

gagtgaacag atactgaaag cggccagtct ccaggttccc aggcccagcc 1000

ctggccacca tcatccacct gctgtcaaag agatgaagga gactcagaca 1050

gagagagaca tcccaatgtc tgattccctt tacaggcatg acagcgacac 1100

accctcagat agcttggata gctcctgcag ttcgcctcct gcctgccagg 1150

ccacagagga tgtggattac acacaagtcg tcttttctga ccctggagaa 1200

ctaaaatgac tccccgctgg actatgagaa cataaaggaa atcacagatt 1250

atgtcaatgt caatccagaa agacacaagc ccagtttctg gtattttgtc 1300

aaccctgctt cttgtctgag ccagcggaat tatgatcaag tggccatgtg 1350

aattccaaat attttttaaa tggggtccag ttctctatgg ntttcttana 1400

atttaatttt gtaggggnaa ntgccatttt nccccttta aacaanggnt 1450

tggggntaaa agnttttttng ggcca 1475
```

<210> 66
<211> 2249
<212> DNA
<213> Homo sapien

<400> 66
```
aaacttttgc agcggctggg tagcagcacg tctcttgctc ctcagggcca 50

ctgccaggct tgccgagtcc tgggactgct ctcgctccgg ctgccactct 100
```

112

```
cccgcgctct cctagctccc tgcgaagcag gatggccggg accgtgcgca 150

ccgcgtgctt ggtggtggcg atgctgctca gcttggactt cccgggacag 200

gcgcagcccc cgccgccgcc gccggacgcc acctgtcacc aagtccgctc 250

cttcttccag agactgcagc ccggactcaa gtgggtgcca gaaactcccg 300

tgccaggatc agatttgcaa gtatgtctcc ctaagggccc aacatgctgc 350

tcaagaaaga tggaagaaaa ataccaacta acagcacgat tgaacatgga 400

acagctgctt cagtctgcaa gtatggagct caagttctta attattcaga 450

atgctgcggt tttccaagag gcctttgaaa ttgttgttcg ccatgccaag 500

aactacacca atgccatgtt caagaacaac tacccaagcc tgactccaca 550

agcttttgag tttgtgggtg aatttttcac agatgtgtct ctctacatct 600

tgggttctga catcaatgta gatgacatgg tcaatgaatt gtttgacagc 650

ctgtttccag tcatctatac ccagctaatg aacccaggcc tgcctgattc 700

agccttggac atcaatgagt gcctccgagg agcaagacgt gacctgaaag 750

tatttgggaa tttcccccaag cttattatga cccaggtttc caagtcactg 800

caagtcacta ggatcttcct tcaggctctg aatcttggaa ttgaagtgat 850

caacacaact gatcacctga agttcagtaa ggactgtggc cgaatgctca 900

ccagaatgtg gtactgctct tactgccagg gactgatgat ggttaaaccc 950

tgtggcggtt actgcaatgt ggtcatgcaa ggctgtatgg caggtgtggt 1000

ggagattgac aagtactgga gagaatacat tctgtccctt gaagaacttg 1050

tgaatggcat gtacagaatc tatgacatgg agaacgtact gcttggtctc 1100

ttttcaacaa tccatgattc tatccagtat gtccagaaga atgcaggaaa 1150

gctgaccacc actattggca agttatgtgc ccattctcaa caacgccaat 1200

atagatctgc ttattatcct gaagatctct ttattgacaa gaaagtatta 1250

aaagttgctc atgtagaaca tgaagaaacc ttatccagcc gaagaaggga 1300

actaattcag aagttgaagt ctttcatcag cttctatagt gctttgcctg 1350

gctacatctg cagccatagc cctgtggcgg aaaacgacac cctttgctgg 1400

aatggacaag aactcatgga gagatacagc caaaaggcag caaggaatgg 1450

aatgaaaaac cagttcaatc tccatgagct gaaaatgaag ggccctgagc 1500

cagtggtcag tcaaattatt gacaaactga agcacattaa ccagctcctg 1550
```

113

```
agaaccatgt ctatgcccaa aggtagagtt ctggataaaa acctggatga 1600

ggaagggttt gaaagtggag actgcggtga tgatgaagat gagtgcattg 1650

gaggctctgg tgatggaatg ataaaagtga agaatcagct ccgcttcctt 1700

gcagaactgg cctatgatct ggatgtggat gatgcgcctg gaaacagtca 1750

gcaggcaact ccgaaggaca acgagataag caccttthac aacctcggga 1800

acgttcattc cccgctgaag cttctcacca gcatggccat ctcggtggtg 1850

tgcttcttct tcctggtgca ctgactgcct ggtgcccagc acatgtgctg 1900

ccctacagca ccctgtggtc ttcctcgata aagggaacca ctttcttatt 1950

tttttctatt tttttttttt tgttatcctg tatacctcct ccagccatga 2000

agtagaggac taaccatgtg ttatgttttc gaaaatcaaa tggtatcttt 2050

tggaggaaga tacattttag tggtagcata tagattgtcc ttttgcaaag 2100

aaagaaaaaa aaccatcaag ttgtgccaaa ttattctcct atgtttggct 2150

gctagaacat ggttaccatg tctttctctc tcactccctc cctttctatc 2200

gttctctctt tgcatggatt tctttgaaaa aaaataaatt gctcaaata 2249
```

<210> 67
<211> 3171
<212> DNA
<213> Homo sapien

<400> 67
```
gcggaacacc ggcccgccgt cgcggcagct gcttcacccc tctctctgca 50

gccatggggc tccctcgtgg acctctcgcg tctctcctcc ttctccaggt 100

ttgctggctg cagtgcgcgg cctccgagcc gtgccgggcg gtcttcaggg 150

aggctgaagt gaccttggag gcgggaggcg cggagcagga gcccggccag 200

gcgctgggga aagtattcat gggctgccct gggcaagagc cagctctgtt 250

tagcactgat aatgatgact tcactgtgcg gaatggcgag acagtccagg 300

aaagaaggtc actgaaggaa aggaatccat tgaagatctt cccatccaaa 350

cgtatcttac gaagacacaa gagagattgg gtggttgctc caatatctgt 400

ccctgaaaat ggcaagggtc ccttcccccca gagactgaat cagctcaagt 450

ctaataaaga tagagacacc aagattttct acagcatcac ggggccgggg 500

gcagacagcc cccctgaggg tgtcttcgct gtagagaagg agacaggctg 550

gttgttgttg aataagccac tggaccggga ggagattgcc aagtatgagc 600
```

```
tctttggcca cgctgtgtca gagaatggtg cctcagtgga ggaccccatg 650

aacatctcca tcatcgtgac cgaccagaat gaccacaagc ccaagtttac 700

ccaggacacc ttccgaggga gtgtcttaga gggagtccta ccaggtactt 750

ctgtgatgca ggtgacagcc acagatgagg atgatgccat ctacacctac 800

aatggggtgg ttgcttactc catccatagc caagaaccaa aggacccaca 850

cgacctcatg ttcacaattc accggagcac aggcaccatc agcgtcatct 900

ccagtggcct ggaccgggaa aaagtccctg agtacacact gaccatccag 950

gccacagaca tggatgggga cggctccacc accacggcag tggcagtagt 1000

ggagatcctt gatgccaatg acaatgctcc catgtttgac ccccagaagt 1050

acgaggccca tgtgcctgag aatgcagtgg gccatgaggt gcagaggctg 1100

acggtcactg atctggacgc ccccaactca ccagcgtggc gtgccaccta 1150

ccttatcatg ggcggtgacg acggggacca ttttaccatc accacccacc 1200

ctgagagcaa ccagggcatc ctgacaacca ggaagggttt ggattttgag 1250

gccaaaaacc agcacaccct gtacgttgaa gtgaccaacg aggccccttt 1300

tgtgctgaag ctcccaacct ccacagccac catagtggtc cacgtggagg 1350

atgtgaatga ggcacctgtg tttgtcccac cctccaaagt cgttgaggtc 1400

caggagggca tccccactgg ggagcctgtg tgtgtctaca ctgcagaaga 1450

ccctgacaag gagaatcaaa agatcagcta ccgcatcctg agagacccag 1500

cagggtggct agccatggac ccagacagtg ggcaggtcac agctgtgggc 1550

accctcgacc gtgaggatga gcagtttgtg aggaacaaca tctatgaagt 1600

catggtcttg gccatggaca atggaagccc tcccaccact ggcacgggaa 1650

cccttctgct aacactgatt gatgtcaacg accatggccc agtccctgag 1700

ccccgtcaga tcaccatctg caaccaaagc cctgtgcgcc acgtgctgaa 1750

catcacggac aaggacctgt ctccccacac ctcccctttc caggcccagc 1800

tcacagatga ctcagacatc tactggacgg cagaggtcaa cgaggaaggt 1850

gacacagtgg tcttgtccct gaagaagttc ctgaagcagg atacatatga 1900

cgtgcacctt tctctgtctg accatggcaa caaagagcag ctgacggtga 1950

tcagggccac tgtgtgcgac tgccatggcc atgtcgaaac ctgccctgga 2000

ccctggaaag gaggtttcat cctccctgtg ctgggggctg tcctggctct 2050
```

```
gctgttcctc ctgctggtgc tgcttttgtt ggtgagaaag aagcggaaga 2100

tcaaggagcc cctcctactc ccagaagatg acacccgtga caacgtcttc 2150

tactatggcg aagagggggg tggcgaagag gaccaggact atgacatcac 2200

ccagctccac cgaggtctgg aggccaggcc ggaggtggtt ctccgcaatg 2250

acgtggcacc aaccatcatc ccgacaccca tgtaccgtcc taggccagcc 2300

aacccagatg aaatcggcaa ctttataatt gagaacctga aggcggctaa 2350

cacagacccc acagccccgc cctacgacac cctcttggtg ttcgactatg 2400

agggcagcgg ctccgacgcc gcgtccctga gctccctcac ctcctccgcc 2450

tccgaccaag accaagatta cgattatctg aacgagtggg gcagccgctt 2500

caagaagctg gcagacatgt acggtggcgg ggaggacgac taggcggcct 2550

gcctgcaggg ctggggacca aacgtcaggc cacagagcat ctccaagggg 2600

tctcagttcc cccttcagct gaggacttcg gagcttgtca ggaagtggcc 2650

gtagcaactt ggcggagaca ggctatgagt ctgacgttag agtggttgct 2700

tccttagcct ttcaggatgg aggaatgtgg gcagtttgac ttcagcactg 2750

aaaacctctc cacctgggcc agggttgcct cagaggccaa gtttccagaa 2800

gcctcttacc tgccgtaaaa tgctcaaccc tgtgtcctgg gcctgggcct 2850

gctgtgactg acctacagtg gactttctct ctggaatgga accttcttag 2900

gcctcctggt gcaacttaat tttttttttt aatgctatct tcaaaacgtt 2950

agagaaagtt cttcaaaagt gcagcccaga gctgctgggc ccactggccg 3000

tcctgcattt ctggtttcca gaccccaatg cctcccattc ggatggatct 3050

ctgcgttttt atactgagtg tgcctaggtt gccccttatt ttttattttc 3100

cctgttgcgt tgctatagat gaagggtgag gacaatcgtg tatatgtact 3150

agaacttttt tattaaagaa a 3171

<210> 68
<211> 960
<212> DNA
<213> Homo sapien

<220>
<221> Unsure
<222> 404-475, 502, 510, 517, 531, 546, 552, 559, 569, 575, 583,
     590-591, 702-751, 785-786, 791, 814, 826, 846, 886, 897, 932,
     939
<223> Unknown base
```

<400> 68

```
gcgccttgcc cgcggccccg ccgggcctca ggcccgggga ccctcagcgc 50

taccttttgc ctccggctct gggactgctc gtggccgcgg gcgtggccgg 100

cgctgcgctc ttgctggtcc acgtgcgccg ccgtggccac tcccaggatg 150

ctgggtctcg cttgctggct gggaccccgg agccgtcagt ccacgcactc 200

ccggatgcac tcaacaacct aaggacgcag gagggttccg gggatggtcc 250

gagctcgtcc gtagattgga atcgccctga agatgtagac cctcaaggga 300

tttatgtcat atctgctcct tccatctacg ctcgggaggt agcgacgccc 350

cttttccccc cgctacacac tgggcgcgct gggcagaggc agcacctgct 400

tttnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 450

nnnnnnnnnn nnnnnnnnnn nnnncgggc gtggccggcg ctgcgctctt 500

gntggtccan gtgcgcngcc gtggccaatc ncaggatgct gggtcncgct 550

tnctggttng accccggng ccgtnagtcc acncactccn ngatgcactc 600

aacaacctaa ggacgcagga gggttcccgg ggatggtccg agctcgtccg 650

tagattggaa tcgccctgaa gatgtagacc ctcacaggga gtgtatgtaa 700

tnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 750

ntccgcacgt ggagtcagag cgtggatttt tgtanntgct nggtggtgcc 800

cagtctctgc cccngaggct ttgganttca atcttgaagg ggtgtnctgg 850

gggaacttta ctgttgcaag ttgtaaataa tggttntttta tatcgtnttt 900

tttcgtcacc ccatctctga tagaaacacc tntaaaggnt attattgtga 950

gtcaaaaaaa 960
```

<210> 69
<211> 1686
<212> DNA
<213> Homo sapien

<400> 69

```
gcggcgactg cggcgaccgc gggacggcga gaggcacgcg gcgggagggg 50

accggaatcc gcagctccgg ccgcgccatg gacggcaacg acaacgtgac 100

cctgctcttc gcccctctgc tgcgggacaa ctacaccctg gcgcccaatg 150

ccagcagcct gggcccccggc acggacctcg ccctcgcccc tgcctccagc 200

gccggccccg gccctgggct cagcctcggg ccgggtccga gcttcggctt 250

cagccccggc cccactccga ccccggagcc cacgaccagc ggcctcgcgg 300
```

gcggcgcggc gagccacggc ccttccccgt tccctcggcc ctgggcgccc 350

cacgcgctcc cgttctggga cacgccgctg aaccacgggc tgaacgtgtt 400

cgtgggcgcc gccctgtgca tcaccatgct gggcctgggc tgcacggtgg 450

acgtgaacca cttcggggcg cacgtccgtc ggcccgtggg cgcgctgctg 500

gcagcgctct gccagttcgg cctcctgccg ctgctggcct tcctgctggc 550

cctcgccttc aagctggacg aggtggccgc cgtggcggtg ctcctgtgtg 600

gctgctgtcc cggcggcaat ctctccaatc ttatgtccct gctggttgac 650

ggcgacatga acctcagcat catcatgacc atctcctcca cgcttctggc 700

cctcgtcttg atgcccctgt gcctgtggat ctacagctgg gcttggatca 750

acacccctat cgtgcagtta ctacccctag ggaccgtgac cctgactctc 800

tgcagcactc tcatacctat cgggttgggc gtcttcattc gctacaaata 850

cagccgggtg gctgactaca ttgtgaaggt ttccctgtgg tctctgctag 900

tgactctggt ggtccttttc ataatgaccg gcactatgtt aggacctgaa 950

ctgctggcaa gtatccctgc agctgtttat gtgatagcaa tttttatgcc 1000

tttggcaggc tacgcttcag gttatggttt agctactctc ttccatcttc 1050

cacccaactg caagaggact gtatgtctgg aaacaggtag tcagaatgtg 1100

cagctctgta cagccattct aaaactggcc tttccaccgc aattcatagg 1150

aagcatgtac atgtttcctt tgctgtatgc acttttccag tctgcagaag 1200

cggggatttt tgttttaatc tataaaatgt atggaagtga aatgttgcac 1250

aagcgagatc ctctagatga agatgaagat acagatattt cttataaaaa 1300

actaaaagaa gaggaaatgg cagacacttc ctatggcaca gtgaaagcag 1350

aaaatataat aatgatggaa accgctcaga cttctctcta aatgtggaga 1400

tacacaggag cttctatctt gctgaaatat tgcttcatat ttatagcctg 1450

tggtagtgca catggttaac ataaaagata acactggttc acatcataca 1500

tgtaacaatt ctgatctttt taaggttcac tggtgtatta accaaacgtt 1550

gtcacaaatt acaaatcaat gctgtaatat aatttgcacc tggaatggct 1600

aacgtgaagc ctgaattaaa tgtggttttt agtttttacc atcaccaaaa 1650

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 1686

<210> 70
<211> 2476

118

<212> DNA
<213> Homo sapien

<400> 70
cggccagcac accccggcac ctcctctgcg gcagctgcgc ctcgcaagcg 50

cagtgccgca gcgcacgccg gagtggctgt agctgcctcg gcgcggctgc 100

cgccctgcgc gggctgtggg ctgcgggctg cgcccccgct gctggccagc 150

tctgcacggc tgcgggctct gcggcgcccg gtgctctgca acgctgcggc 200

gggcggcatg ggataacgcg gccatggtgc gccgagatcg cctccgcagg 250

atgagggagt ggtgggtcca ggtggggctg ctggccgtgc ccctgcttgc 300

tgcgtacctg cacatcccac cccctcagct ctccctgcc cttcactcat 350

ggaagtcttc aggcaagttt ttcacttaca agggactgcg tatcttctac 400

caagactctg tgggtgtggt tggaagtcca gagatagttg tgcttttaca 450

cggttttcca acatccagct acgactggta caagatttgg aagggtctga 500

ccttgaggtt tcatcgggtg attgcccttg atttcttagg ctttggcttc 550

agtgacaaac cgagaccaca tcactattcc atatttgagc aggccagcat 600

cgtggaagcg cttttgcggc atctggggct ccagaaccgc agaatcaacc 650

ttctttctca tgactatgga gatattgttg ctcaggagct tctctacagg 700

tacaagcaga atcgatctgg tcggcatacc ataaagagtc tctgtctgtc 750

aaatggaggt atctttcctg agactcaccg tccactcctt ctccaaaagc 800

tactcaaaga tggaggtgtg ctgtcaccca tcctcacacg actgatgaac 850

ttctttgtat tctctcgagg tctcaccca gtctttgggc cgtatactcg 900

gccctctgag agtgagctgt gggacatgtg ggcagggatc cgcaacaatg 950

acgggaactt agtcattgac agtctcttac agtacatcaa tcagaggaag 1000

aagttcagaa ggcgctgggt gggagctctt gcctctgtaa ctatccccat 1050

tcattttatc tatgggccat tggatcctgt aaatccctat ccagagtttt 1100

tggagctgta caggaaaacg ctgccgcggt ccacagtgtc gattctggat 1150

gaccacatta gccactatcc acagctagag gatcccatgg gcttcttgaa 1200

tgcatatatg ggcttcatca actccttctg agctggaaag agtagcttcc 1250

ctgtattacc tcccctactc ccttatgtgt tgtgtattcc acttaggaag 1300

aaatgcccaa aagaggtcct ggccatcaaa cataattctc tcacaaagtc 1350

119

```
cactttactc aaattggtga acagtgtata ggaagaagcc agcaggagct 1400

ctgactaagg ttgacataat agtccacctc ccattacttt gatatctgat 1450

caaatgtata gacttggctt tgtttttgt gctattagga aattctgatg 1500

agcattacta ttcactgatg cagaaagacg ttcttttgca taaaagactt 1550

ttttttaaca ctttggactt ctctgaaata tttagaagtg ctaatttctg 1600

gcccacccc aacaggaatt ctatagtaag gaggaggaga aggggggctc 1650

cttccctctc ctcgaatgac gttatgggca catgcctttt aaaagttctt 1700

taagcaacac agagctgagt cctctttgtc atacctttgg atttagtgtt 1750

tcatcagctg ttttttagtta taaacatttt gttaaaatag atattggttt 1800

aaatgataca gtattttagg tatgatttaa gactatgatt tacctataca 1850

ttatatatat tttataaaga tactaaacca gcataccctt actctgccag 1900

agtagtgaag ctaattaaac acgtttggtt tctgaataaa ttgaactaaa 1950

tccaaactat ttcctaaaat cacaggacat taaggaccaa tagcatctgt 2000

gccagagatg tactgttatt agctgggaag accaattcta acagcaaata 2050

acagtctgag actcctcata cctcagtggt tagaagcatg tctctcttga 2100

gctacagtag aggggaaggg attgttgtgt agtcaagtca ccatgctgaa 2150

tgtacactga ttcctttatg atgactgctt aactccccac tgcctgtccc 2200

agagaggctt tccaatgtag ctcagtaatt cctgttactt tacagacagg 2250

aaagttccag aaactttaag aacaaactct gaaagaccta tgagcaaatg 2300

gtgctgaata cttttttttt aaagccacat ttcattgtct tagtcaaagc 2350

aggattatta agtgattatt taaaattcgt ttttttaaat tagcaacttc 2400

aagtataaca actttgaaac tggaataagt gtttattttc tattaataaa 2450

aatgaattgt gacaaaaaaa aaaccg 2476
```

<210> 71
<211> 5724
<212> DNA
<213> Homo sapien

<400> 71
```
cgggtggaca agtcacctgt ctaactgtgg tgagagcaac aggcctccaa 50

aggaaagaag ttgtttccga gtttgtgact ggcacagtga cctctttcag 100

tgggaggttt ctgactggca ccactgtgtg cttgttcctt acgctcgcgg 150
```

```
tgaagtcaag cctcggactg cagagtgtgt gacggctcag catggactgc 200

agcaccggat ggtgcgctgc attcagaagc tgaaccgaac tgtggttgca 250

aatgaaatat gcgaacactt tgcccttcag cctcctacag aacaggcttg 300

cctcattcct tgtccccggg attgtgtagt atctgagttc ttaccatggt 350

ccaactgtag caagggatgt gggaagaaat tgcagcatag aactcgcgcg 400

gtcatagctc cccctctctt tggtggtttg caatgtccaa atctgactga 450

gtcaagagcc tgtgatgctc ccatttcctg tcctcttggg gaagaggaat 500

atacatttag ccttaaggtt ggaccatgga gtaaatgcag actgcctcat 550

cttaaagaaa ttaatccaag cggaagaact gttctggatt ttaactctga 600

ttcaaatgag cgagtcacct ttaaacatca aagttacaaa gcacatcatc 650

attcgaagtc ttgggcaata gagataggtt atcaaacccg gcaggtttcg 700

tgtacaagaa gtgatggaca aaatgctatg ttaagccttt gccttcaaga 750

ttccttccca ttgactgttc agtcctgcat catgcccaaa gactgtgaaa 800

cctcccagtg gtcctcctgg agcccctgct ccaagacatg ccgttcaggg 850

agtctcttgc caggatttag gagcaggagc cggaacgtga agcacatggc 900

tattggaggt ggaaaggagt gtcctgaact tcttgagaaa gaggcctgca 950

ttgttgaagg agaacttctg cagcaatgtc ccaggtattc ctggagaact 1000

tctgaatgga aagaatgcca agtctctctc ctcctcgagc agcaggatcc 1050

ccactggcat gtgacgggac ccgtgtgtgg cggtgggatc cagacccggg 1100

aggtgtactg tgcccagagc gtaccagcag ctgccgcact gagggccaag 1150

gaagtctcta gacctgtgga aaaggcatta tgtgtgggac ccgccccgtt 1200

gccctctcag ctctgcaata tcccttgctc tacggactgc atagtatctt 1250

cctggtcagc ctggggcctg tgcatccatg aaaactgtca tgaacctcag 1300

gggaaaaaag gatttagaac gaggcagcgc catgtcctca tggaatctac 1350

agggcctgca gggcattgcc ctcatttggt ggagtctgtt ccttgtgagg 1400

atccaatgtg ctaccgatgg ctggcatcag aagggatctg tttccctgat 1450

catggaaaat gtggcctggg acatcgtatt ctgaaggccg tctgccagaa 1500

tgaccgcgga gaagatgtat cagggagtct ttgcccagtt ccccctcctc 1550

ctgagaggaa gtcttgtgaa attccctgcc gaatggactg tgtgctgagc 1600
```

121

```
gagtggacgg agtggtcatc ctgttcccag tcctgttcaa ataaaaactc 1650

agatgggaaa cagaccaggt caagaactat cctggcactg gctggggaag 1700

gtggaaagcc atgtccccct agtcaggctc tccaagagca tcgtttgtgt 1750

aatgaccatt cctgtatgca gcttcactgg gagacatcgc cttggggccc 1800

ttgttctgag gacacattgg taactgccct taatgcaacc attggctgga 1850

atggagaagc cacgtgtggt gtaggcattc agactcggag agtcttctgt 1900

gtcaagagtc acgtgggaca agtaatgacc aaaagatgtc cagattctac 1950

tcgacctgaa actgtgcgcc cctgttttct cccatgcaaa aaagactgta 2000

ttgtgactgc tttcagtgag tggacaccct gcccaaggat gtgccaagca 2050

ggaaatgcca cagtaaaaca gtctcgatac agaatcatca tccaagaagc 2100

agccaatgga ggccaggaat gcccagatac cttatatgag gagagagagt 2150

gtgaagatgt ttccttgtgt cctgtatatc ggtggaagcc acagaaatgg 2200

agcccttgca tcttagtgcc agagtctgtc tggcagggaa taacgggcag 2250

cagtgaagcc tgtggaaagg ggttacaaac aagagctgtc tcatgcatct 2300

ctgatgacaa ccggtcagca gaaatgatgg aatgcctcaa gcagacaaac 2350

ggcatgcctc tccttgtgca agaatgcaca gtcccatgtc gagaagactg 2400

caccttcact gcttggtcca agtttacgcc ctgctccacg aactgtgaag 2450

ccacaaaaag taggcggcga cagctcacag ggaaaagcag aaagaaggag 2500

aaatgccagg attctgacct ttaccctcta gtggagacag aactatgtcc 2550

ttgtgatgaa tttatatccc aaccttatgg aaactggtca gattgcattc 2600

ttccagaagg cagaagggag cctcaccgag gactgcgggt acaagcagac 2650

agcaaagaat gtggagaagg cctgcgcttt cgagcagtag cctgttctga 2700

taaaaatgga agacctgttg acccctcctt ctgcagcagc tctggttaca 2750

ttcaagaaaa atgtgtcatt ccctgcccat ttgattgcaa gttaagcgat 2800

tggtctagtt gggggtcttg cagttcatct tgtggaattg gagtgagaat 2850

tcgatccaaa tggctaaaag aaaaacctta caatggagga cgaccatgtc 2900

ccaaactgga tctcaagaat caggctcagg tacatgaggc agtcccatgt 2950

tacagtgagt gcaatcagta ttcctgggtt gtagaacact ggtcttcatg 3000

caaaatcaac aatgagctga ggtccctgcg ctgtggagga ggaacacaat 3050
```

```
ctaggaaaat cagatgtgtg aatactgcgg atggtgaagg tggagcagtg 3100

gatagcaacc tgtgcaacca ggatgaaatt cccccagaaa cccagtcctg 3150

ttctcttatg tgtcccaatg agtgtgtcat gtctgagtgg ggactttgga 3200

gcaaatgccc acagtcatgc gatccccaca caatgcagag aagaactcgc 3250

cacctgctaa gaccatcact gaactcaagg acttgtgctg aagactcaca 3300

ggtgcagcct tgcctcctga atgaaaattg cttccagttc cagtacaatc 3350

taacagagtg gagcacatgc cagctgagtg aaaacgcacc ctgtggtcaa 3400

ggcgtcagga cccgcctgct aagctgtgtg tgcagtgatg gcaagccagt 3450

cagcatggac caatgtgagc agcataattt ggagaagccc cagagaatga 3500

gcattccctg cttggtggaa tgcgtggtca actgtcagct ctcagggtgg 3550

acggcttgga cagagtgttc acagacctgt ggccatggag gtcgaatgag 3600

ccggactcga tttatcatta tgccaaccca aggagaagga cggccatgcc 3650

ccacagagct tacccaggag aaaacctgcc cagtgacccc ctgctacagc 3700

tgggtccttg gcaactggtc tgcatgtaaa ttggagggtg gagactgtgg 3750

ggaaggagtt cagatccgca gcctttcctg catggtccac agtggttcaa 3800

tatctcatgc agctggacgt gtcgaggatg cactgtgtgg agaaatgccc 3850

tttcaggaca gcatcctgaa gcagctgtgt tctgtgcctt gcccaggaga 3900

ctgccattta acagaatggt cagagtggag cacatgtgaa ttaacctgca 3950

ttgatggaag aagctttgag actgtgggcc gccagtctag atcaaggact 4000

tttataattc agtcttttga gaaccaagac agctgccccc aacaggttct 4050

agaaacacgc ccttgtacag gaggcaaatg ttatcactac acatggaaag 4100

caagtctttg gaacaataac gaacgaactg tatggtgcca gcgttcagat 4150

ggcgttaatg tcacaggagg ctgctcccct caggcccgtc ctgctgccat 4200

tcggcagtgc attccagcct gcagaaaacc tttctcctac tgtacacagg 4250

gtggagtctg tggttgtgag aagggctata cagagataat gagatcaaat 4300

ggtttcctgg attactgcat gaaagtacca ggctcagagg ataaaaaagc 4350

tgatgtgaaa aacctttctg ggaaaaacag acctgtgaat tcaaaaatac 4400

atgatatttt taaaggatgg tctcttcaac cacttgatcc agatggccga 4450

gtaaaaattt gggtttatgg cgtttcaggt ggcgcttttc tcatcatgat 4500
```

```
tttcctaata tttacttcct accttgtttg caagaagcca aaaccacatc 4550

aaagcacacc tccccaacag aagcctctga ccttagccta cgatggagac 4600

ttagacatgt aatctgaaaa agaaatccaa atgtagacat caactgcctt 4650

aaccgctttc tcttttgtag ctctcagact tctcagtttt ttgaggaatc 4700

tcaagatgtg atatattggg cagaatacaa atattgcaaa agtaatattg 4750

cctcaacttc atttggacat ggagtcaagg attattaggt ctgccatttt 4800

gttttcaagt tgtttgtggg tgtgttttat ttttttggtt ttcccaaggg 4850

acctgaaaac ccttctcttc ctgtttggaa ctgggaggaa gaaaacatga 4900

tggaattccc acagacttga gtaaacttga tcttcagcag cataatgaca 4950

atccagagga aaatacagtc aaggcattta ctctaaatga cgagtctgac 5000

actgcattgt tacgcactat attagtgcaa agtctttatt cttcccatac 5050

ttcaacactg agttttctag agtttacttt ggtttaaaga ctttcaaatt 5100

ggattgccta ttttttcatga acacagagag aatggattac catttcagaa 5150

attctctgag tttttaacct ttaaatattg tattttgttt tgtagccagg 5200

ggatgatggc gcttcatggg ttgcagctac tgaaaatagc agcgtgtgtg 5250

taattgctgg actagatgaa agctaggtca tttctgaagg gaatgtgtac 5300

tgaatgttag agtgtacaaa tgaaatatgt ggttaaattg gagaatgagg 5350

tagattattt gattactaaa actgtatttt aacaaaaact tatccatgta 5400

gatatagcat taaccacaca cagttgtaat tcagtttaat gatgacaaac 5450

tctgcttttg taatttcaat tttcttatct gaatatttat aaattcttct 5500

ttcaaattta attatctgac ctcatttaat atacatcaaa caccgatcct 5550

gtttgtacaa agtcttgctt ttataaggtt tcaataatat ctaaaacaac 5600

acattaaaaa gctgagacca ttttatgaag ataattgttt gtaatcatag 5650

gtgttgaaag taaaaaggtg ccatcttgtg gtattgactt gtatttataa 5700

caaataaact gctcaagaga ctgc 5724
```

<210> 72
<211> 4450
<212> DNA
<213> Homo sapien

<400> 72
```
cccacctcgg ccacactgct tcgctccccc ctccccacct tcagctggca 50
```

```
ccgcaaacaa gccttacctc gttgcatctg cgaggagagg tagcaacagc 100

gagcctagcc agccagaggc ggtggagagg aggaaggggc ggggtggggg 150

ggcagagagc gggccgaggc cgcccttggt gggggtagcg ggggcagagc 200

tgccgagcag acccggcagc cgccctcctc cgcccccacc ctccagaagc 250

actcttgcct gagaaccgaa ttattccact agtattattt cattttttat 300

tactcccctt cctcactccc cagccgcccc caccccacg ccggcctcgc 350

ctctggttgc atggcagcgc tgcccgggcg cggggctca gggctggccc 400

ccagggaagg gggaggagga ggaggatcat gaaggccgga gtcgcgaccg 450

cgccggacgg cgggcagcag ccagaggacg agccggagca gccccgccc 500

cggagacacc cggacgccga gcagcagtcg cctccgccgc cgcagcagca 550

gctgcgggcg cgggccgacc cggagccgga ggaggagggc gaccgcgacc 600

cagaggagga agaggaggag aaggcgaggc cactcgcccg cccggacctg 650

cccttctctc ggctcttgcc cctcgaccga agggaccttt gatggaaccg 700

aggggagggc gccacggatt tgccgactgc agcaggggtg ggctgggggc 750

tgagataatg taaccactcc tttctcctgt tctctcccac acgcccctct 800

cctctacccc tattctctgc tccactgccc tctcacccccg gtacacacac 850

ccttcctcta gccaggatct tcatgctcag gaaggaggcg cctctgcaag 900

ggttaaacga tcttttcttt ttctcccatc ctttttcctt cccaaacctc 950

tattttacct cccttctcct aattggcttt cccctcttcg gtgtaaccct 1000

ttggctgcgg aggcaaagca caagcccta gcccagtttc acctgcaaca 1050

cccctccccc acccaactgc tctcttaaaa gcaactctgg tgcttctggg 1100

ggttaattgc cccagttttc tgcccaggag aattaaaact tctcccaatc 1150

ttctctcctc ccctaccttg actcccccaa ccctaccac ctgagaaaaa 1200

cgatctttc tctctcacac atgcagtcct caattcttca ttgagctagt 1250

tttctctaag cccagctcaa tccactccag atttgattta caattgtccc 1300

caccctttta tataaaagaa agatttctca ctgcgtagga atttgagaag 1350

aacccaataa tcctttcctg gggacttttt aaacaattcg acattgattt 1400

aaacaattcg acagaggctc tagtggcccc tccaccacgc ttcttcaatc 1450

cctctgctcc taccagtgtc ctcaggtcaa aagcagaaag gagacacact 1500
```

```
gaacaaagtt ggaggttggg gtgggtgtgt gagggcaaga aaaacttttt 1550

tgttattggg ctttccaggt ggagttcaga accagtgact cacacttctc 1600

agtcctggga gcaatttatt tgctacttgg aggggttgta agaaaagcca 1650

gtgagaaagc agactccccc cacaacacag atccactgtg dacccccaaa 1700

acctgtcctg tcccccctctt ttaagactcc agccacccct cttgggctct 1750

ctacttccac ggggcacatg ctgatgcccc tgtgtgggct gctctggtgg 1800

tggtggtgct gctgctccgg ctggtactgc tatggattgt gtgccccagc 1850

cccccagatg ttgcgccacc agggtctcct caagtgccgc tgccgcatgc 1900

tcttcaatga cctgaaggtt ttcttactgc ggcgccctcc tcaagcgccc 1950

ctgcccatgc acggcgaccc ccagcccccc ggtttggcgg ccaacaacac 2000

ccttccggct ctgggcgccg gggggtgggc aggctggagg ggcccccgag 2050

aagtggtggg cagggagccc cctcctgtgc cacctccacc ccccttgcca 2100

ccttcttctg tggaagatga ctggggtggc ccagccacag agccacctgc 2150

ctcgctgctc agcagtgcct cctcagatga cttctgtaag gagaagaccg 2200

aggatcgcta ctcactgggc agcagcttgg acagtggtat gaggacccca 2250

ctctgccgca tctgcttcca ggggccagaa caggggggagc tgctgagccc 2300

atgccgctgt gatggctcgg tcaagtgcac acaccagcct tgcctcatca 2350

agtggatcag cgagcggggc tgctggagct gcgagctgtg ctactacaag 2400

taccacgtca tcgccataag cacaaaaaat cctctgcagt ggcaggccat 2450

ctctctgacg gtcattgaga aggttcaggt tgcagccgcc atcctgggct 2500

ccctcttcct catcgccagt atttcttggc tcatctggtc aactttcagc 2550

ccctcggcaa gatggcagcg ccaagacctt ctcttccaga tctgctacgg 2600

gatgtatggc ttcatggacg tggtgtgcat aggtctcatc atccatgaag 2650

gaccctcggt gtaccgcatc tttaaacggt ggcaggctgt caaccagcag 2700

tggaaagtgc tgaactatga caagacaaaa gacctggagg atcaaaaggc 2750

aggaggcagg accaacccccc ggacctcctc atccacccag gccaatatcc 2800

cctcctcgga agaggagacc gcaggcaccc ctgcccctga gcagggccct 2850

gcccaggctg ccggccaccc ctcaggccct ctgtcccatc accactgtgc 2900

ttataccatc ctgcacatcc tgagtcactt gagacctcat gaacagcgaa 2950
```

126

```
gtcccccagg cagcagccga gagctggtca tgagagtcac gacagtgtga 3000

gagcagaggc ccggaaggaa ggccatgacc accactgagg gcccggagca 3050

gggtggggag gtgcagtggc acccccggag ccaacagagg gagcaggcag 3100

agggtggggg acctggcggg agccctgggg tagtgtcaga gcgggagtga 3150

ggctggtgca ggagcagttc tgctatttcc aatcagtcaa tgccactctc 3200

cacaacaaca atgaaaacca acaccaactc aacaacaaag tgcaatacag 3250

gctgaacctg gcccaacaga aaaaccctgc cccaatgcac ctgcaggcaa 3300

ggtacccgaa gaagcagagg ctgagggcag gcaaagcctg tgtgactgtg 3350

gcagtgccgg aggccaaggg ggccaagagg aaaagcatct gtggtctgcc 3400

ctgctctcac cctgtttggt tttgtttctc ctggggctgt gttctgcagg 3450

cagccagaaa aggaggaggc acgggtgagc tggcagggac acactgcctt 3500

tggggctcct gggctcattt ggatgagcaa gattcgctga caaatggctg 3550

tggggatggt ggggtggatg gtcagggagg gatcctcagg gagggatatg 3600

ctggtgtgag cagccagagg gagagtgtgt ctccttcctg aaggaacttc 3650

caaatggaac tcccgatttc aggtgggcta aaagagggct taggtttgga 3700

aaagggtgtc cttctgtgcc cttgttaatt tattttatag tgatttggtt 3750

caaagatgtt tacaggacac acacacacac acacacacac acacacacac 3800

acacacaccc ctagagaaaa gtacagattt ccagtggata tttcaagcac 3850

agttctgctg ctgtggcttc agctttggaa gctgtcaatc ccggagcaac 3900

tttcccaact acccaacccc accatggcca ggacatgtgc aatgccagcc 3950

ccttcttgtc ttggcacatg cacagaccca gtcccctcac ggtagggcac 4000

ccctgaccta cgggcttcca agagagcagc tgcagtggtt gggaggagct 4050

tgaccagtgt gccccaagga gtggagtaga gcccaatcta agtattcctt 4100

gctgcttgga accctccctg tttggaaccc tccccaaaga ggcagtcagg 4150

ctgatgctca gtgctttgtg ctccctgctc cttcccgcgt agccaggtgg 4200

gcccaagggt gcctggcagg gagcactacc cctggacccc tcctgctcgc 4250

tctggggacc ctgccaggga aggccactgg gtgttcacct gcaaagtttc 4300

tggttgtcac tgcacagtgg tcgcgtcatc catgggtatt aaaaggacac 4350

tgtcaagtac ttttttaaac tagttttttag ggttttttaa aactctctgt 4400
```

127

```
tgtttgtaat attctcttaa aagcttgaaa ataaaacttc tttccctacc 4450
```

<210> 73
<211> 3758
<212> DNA
<213> Homo sapien

<400> 73
```
caggagcaag gggacaagat gatggaggaa tacagcctgg agaaaaatga 50

gagggcctgc attgatttcg ccatcagcgc caagccgctg acccgacaca 100

tgccgcagaa caagcagagc ttccagtacc gcatgtggca gttcgtggtg 150

tctccgcctt tcgagtacac gatcatggcc atgatcgccc tcaacaccat 200

cgtgcttatg atgaagttct atggggcttc tgttgcttat gaaaatgccc 250

tgcgggtgtt caacatcgtc ttcacctccc tcttctctct ggaatgtgtg 300

ctgaaagtca tggcttttgg gattctgaat tatttccgcg atgcctggaa 350

catcttcgac tttgtgactg ttctgggcag catcaccgat atcctcgtga 400

ctgagtttgg gaataacttc atcaacctga gctttctccg cctcttccga 450

gctgcccggc tcatcaaact tctccgtcag ggttacacca tccgcattct 500

tctctggacc tttgtgcagt ccttcaaggc cctgccttat gtctgtctgc 550

tgatcgccat gctcttcttc atctatgcca tcattgggat gcaggtgttt 600

ggtaacattg gcatcgacgt ggaggacgag gacagtgatg aagatgagtt 650

ccaaatcact gagcacaata acttccggac cttcttccag gccctcatgc 700

ttctcttccg gagtgccacc ggggaagctt ggcacaacat catgctttcc 750

tgcctcagcg ggaaaccgtg tgataagaac tctggcatcc tgactcgaga 800

gtgtggcaat gaatttgctt atttttactt tgtttccttc atcttcctct 850

gctcgtttct gatgctgaat ctctttgtcg ccgtcatcat ggacaacttt 900

gagtacctca cccgagactc ctccatcctg ggcccccacc acctggatga 950

gtacgtgcgt gtctgggccg agtatgaccc cgcagcttgc ggtcggattc 1000

attataagga tatgtacagt ttattacgag taatatctcc ccctctcggc 1050

ttaggcaaga aatgtcctca tagggttgct tgcaagcggc ttctgcggat 1100

ggacctgccc gtcgcagatg acaacaccgt ccacttcaat tccaccctca 1150

tggctctgat ccgcacagcc ctggacatca agattgccaa gggaggagcc 1200

gacaaacagc agatggacgc tgagctgcgg aaggagatga tggcgatttg 1250
```

128

```
gcccaatctg tcccagaaga cgctagacct gctggtcaca cctcacaagt 1300

ccacggacct caccgtgggg aagatctacg cagccatgat gatcatggag 1350

tactaccggc agagcaaggc caagaagctg caggccatgc gcgaggagca 1400

ggaccggaca cccctcatgt tccagcgcat ggagcccccg tccccaacgc 1450

aggaaggggg acctggccag aacgccctcc cctccaccca gctggaccca 1500

ggaggagccc tgatggctca cgaaagcggc ctcaaggaga gcccgtcctg 1550

ggtgacccag cgtgcccagg agatgttcca gaagacgggc acatggagtc 1600

cggaacaagg ccccctacc gacatgccca acagccagcc taactctcag 1650

tccgtggaga tgcgagagat gggcagagat ggctactccg acagcgagca 1700

ctacctcccc atggaaggcc agggccgggc tgcctccatg ccccgcctcc 1750

ctgcagagaa ccagaccatc tcagacacca gccccatgaa gcgttcagcc 1800

tccgtgctgg gccccaaggc ccgacgcctg gacgattact cgctggagcg 1850

ggtcccgccc gaggagaacc agcggcacca ccagcggcgc cgcgaccgca 1900

gccaccgcgc ctctgagcgc tccctgggcc gctacaccga tgtggacaca 1950

ggcttgggga cagacctgag catgaccacc caatccgggg acctgccgtc 2000

gaaggagcgg gaccaggagc ggggccggcc caaggatcgg aagcatcgac 2050

agcaccacca ccaccaccac caccaccacc accccccgcc ccccgacaag 2100

gaccgctatg cccaggaacg gccggaccac ggccgggcac gggctcggga 2150

ccagcgctgg tcccgctcgc ccagcgaggg ccgagagcac atggcgcacc 2200

ggcagggcag tagttccgta agtggaagcc cagcccccctc aacatctggt 2250

accagcactc cgcggcgggg ccgccgccag ctcccccaga ccccctccac 2300

ccccccggcca cacgtgtcct attcccctgt gatccgtaag gccggcggct 2350

cggggccccc gcagcagcag cagcagcagc agcagcagca gcagcaggcg 2400

gtggccaggc cgggccgggc ggccaccagc ggccctcgga ggtacccagg 2450

ccccacggcc gagcctctgg ccggagatcg gccgcccacg ggggggccaca 2500

gcagcggccg ctcgcccagg atggagaggc gggtcccagg cccggcccgg 2550

agcgagtccc ccagggcctg tcgacacggc ggggcccggt ggccggcatc 2600

tggcccgcac gtgtccgagg ggcccccggg tccccggcac catggctact 2650

accgggggctc cgactacgac gaggccgatg gcccgggcag cggggggcggc 2700
```

129

```
gaggaggcca tggccggggc ctacgacgcg ccacccccg tacgacacgc 2750

gtcctcgggc gccaccgggc gctcgcccag gactccccgg gcctcgggcc 2800

cggcctgcgc ctcgccttct cggcacggcc ggcgactccc caacggctac 2850

tacccggcgc acggactggc caggccccgc gggccgggct ccaggaaggg 2900

cctgcacgaa ccctacagcg agagtgacga tgattggtgc taagcccggg 2950

cgaggtggcg cccgcccggc cccccacgca ccccacgcac acaccccacc 3000

cgaggagccg cgcagaggcc gcggggggccc agcacagagg gcccgggaga 3050

gggccagccg ggagacccca gactctggag aggccagggc tgggccacaa 3100

gggtgtcccg cagagaccct cggccaaaag agacctcct gggcagccac 3150

ggcgcccccc aaccagcccc gatcccccca cccacgacag gggctctcgg 3200

gtgggaggca gggagcagac aaaccacaca gccaagggat ttgaattaac 3250

tcagccattt ttggagaact ttggggaaca tgaaaaaaaa aaaaaaaaaa 3300

aaaaaaacat ttttaaaaga aaaacggggg agaaaaaat agcttctatt 3350

gatgagtttt atcatctcaa ttgaatcttt cctttccctg atgaagacag 3400

ctggtggccg agtgcggcaa agaagccaga aggaaccaga atcccagtgc 3450

cctacaccca ccaccagaca cactcacacc cacacacgtt ctcagacaca 3500

cacaagagtg cttgccggtt ataccaaacc ctactattac tgcctgcaga 3550

aatcaattta aaaaataat aataacaata aacaatttta aaaggacaa 3600

aaaaattaat gattgagaaa agaggcattt ttttctgaca tttggtcctg 3650

cttgaaacaa caaaagaaga agaaaaaccc accatcacca ccgattcctt 3700

tgcttctttt ttcctttttt cctaccttgt ttgaaaaccg tgggcttggg 3750

actgtgaa 3758
```

```
<210> 74
<211> 4306
<212> DNA
<213> Homo sapien

<400> 74
```

```
ctgcccctgg gtctctgcgc ctttgcatga gactttacgg taagccgctc 50

ctcccgcgcc cccgccccca gccccgctcg gcgatccccg gcgccgtcgc 100

caggcgctgg ccgtggtgct gattctgtca ggcgctggcg gcggcagcgg 150

cggtgacggc tgcggccccg ctccctctac ccggccggac ccggctctgc 200
```

130

```
ccccgcgccc aagccccacc aagccccccg ccctcccgcc gcggtcccag 250

cccagggcgc ggccgcaacc agcaccatgc gcccggtagc cctgctgctc 300

ctgccctcgc tgctggcgct cctggctcac ggactctctt tagaggcccc 350

aaccgtgggg aaaggacaag ccccaggcat cgaggagaca gatggcgagc 400

tgacagcagc ccccacacct gagcagccag aacgaggcgt ccactttgtc 450

acaacagccc ccaccttgaa gctgctcaac caccacccgc tgcttgagga 500

attcctacac gaggggctgg aaaagggaga tgaggagctg aggccagcac 550

tgtcctttca gcctgaccca cctgcaccct tcaccccaag tccccttccc 600

cgcctggcca accaggacag ccgccctgtc tttaccagcc ccactccagc 650

catggctgcg gtacccactc agccccagtc caaggaggga ccctggagtc 700

cggatccgga gtcagagtcc cctatgcttc gaatcacagc tcccctacct 750

ccagggccca gcatggcagt gcccacccta ggcccagggg agatagccag 800

cactacaccc cccagcagag cctggacacc aacccaagag ggtcctggag 850

acatgggaag gccgtgggtt gcagaggttg tgtcccaggg cgcagggatc 900

gggatccagg ggaccatcac ctcctccaca gcttcaggag atgatgagga 950

gaccaccact accaccacca tcatcaccac caccatcacc acagtccaga 1000

caccaggccc ttgtagctgg aatttctcag gcccagaggg ctctctggac 1050

tcccctacag acctcagctc ccccactgat gttggcctgg actgcttctt 1100

ctacatctct gtctaccctg gctatggcgt ggaaatcaag gtcaagaata 1150

tcagcctccg ggaaggggag acagtgactg tggaaggcct ggggggggcct 1200

gacccactgc ccctggccaa ccagtctttc ctgctgcggg gccaagtcat 1250

ccgcagcccc acccaccaag cggccctgag gttccagagc ctcccgccac 1300

cggctggccc tggcaccttc catttccatt accaagccta tctcctgagc 1350

tgccactttc cccgtcgtcc agcttatgga gatgtgactg tcaccagcct 1400

ccacccaggg ggtagtgccc gcttccattg tgccactggc taccagctga 1450

agggcgccag gcatctcacc tgtctcaatg ccacccagcc cttctgggat 1500

tcaaaggagc ccgtctgcat cggtgagtgc ccaggggtga tccgcaatgc 1550

caccaccggc cgcatcgtct ctccaggctt cccgggcaac tacagcaaca 1600

acctcacctg tcactggctg cttgaggctc ctgagggcca gcggctacac 1650
```

131

```
ctgcactttg agaaggtttc cctggcagag gatgatgaca ggctcatcat 1700

tcgcaatggg gacaacgtgg aggccccacc agtgtatgat tcctatgagg 1750

tggaatacct gcccattgag ggcctgctca gctctggcaa acacttcttt 1800

gttgagctca gtactgacag cagcggggca gctgcaggca tggccctgcg 1850

ctatgaggcc ttccagcagg gccattgcta tgagcccttt gtcaaatacg 1900

gtaacttcag cagcagcaca cccacctacc ctgtgggtac cactgtggag 1950

ttcagctgcg accctggcta caccctggag cagggctcca tcatcatcga 2000

gtgtgttgac ccccacgacc cccagtggaa tgagacagag ccagcctgcc 2050

gagccgtgtg cagcggggag atcacagact cggctggcgt ggtactctct 2100

cccaactggc cagagcccta cggtcgtggg caggattgta tctggggtgt 2150

gcatgtggaa gaggacaagc gcatcatgct ggacatccga gtgctgcgca 2200

taggccctgg tgatgtgctt accttctatg atggggatga cctgacggcc 2250

cgggttctgg gccagtactc agggccccgt agccacttca agctctttac 2300

ctccatggct gatgtcacca ttcagttcca gtcggacccc gggacctcag 2350

tgctgggcta ccagcagggc ttcgtcatcc acttctttga ggtgccccgc 2400

aatgacacat gtccggagct gcctgagatc cccaatggct ggaagagccc 2450

atcgcagcct gagctagtgc acggcaccgt ggtcacttac cagtgctacc 2500

ctggctacca ggtagtggga tccagtgtcc tcatgtgcca gtgggaccta 2550

acttggagtg aggacctgcc ctcatgccag agggtgactt cctgccacga 2600

tcctggagat gtggagcaca gccgacgcct catatccagc cccaagtttc 2650

ccgtgggggc caccgtgcaa tatatctgtg accagggttt tgtgctgatg 2700

ggcagctcca tcctcacctg ccatgatcgc caggctggca gccccaagtg 2750

gagtgaccgg gcccctaaat gtctcctgga acagctcaag ccatgccatg 2800

gtctcagtgc ccctgagaat ggtgcccgaa gtcctgagaa gcagctacac 2850

ccagcagggg ccaccatcca cttctcgtgt gcccctggct atgtgctgaa 2900

gggccaggcc agcatcaagt gtgtgcctgg gcacccctcg cattggagtg 2950

accccccacc catctgtagg gctgcctctc tggatggttc tacaacagtc 3000

gcagcctgga tggttgccaa ggcacctgct gcctccagca ccctggatgc 3050

tgcccacatt gcagctgcca tcttcttgcc actggtggcg atggtgttgt 3100
```

132

```
tggtaggagg tgtatacttc tacttctcca ggctccaggg aaaaagctcc 3150

ctgcagctgc cccgcccccg cccccgcccc tacaaccgca ttaccataga 3200

gtcagcgttt gacaatccaa cttacgagac tggatctctt tcctttgcag 3250

gagacgagag aatatgaagt ctccatctag gtgggggcag tctagggaag 3300

tcaactcaga cttgcaccac agtccagcag caaggctcct tgcttcctgc 3350

tgtccctcca cctcctgtat ataccaccta ggaggagatg ccaccaagcc 3400

ctcaagaagt tgtgcccttc cccgcctgcg atgcccacca tggcctattt 3450

tcttggtgtc attgcccact tggggccctt cattgggccc atgtcagggg 3500

gcatctacct gtgggaagaa catagctgga gcacaagcat caacagccgg 3550

catcctgagc ctcctcatgc cctggaccag cctggaacac actagcagag 3600

caggagtacc tttctccaca tgaccaccat cccgccctgg catggcaacc 3650

tgcagcagga ttaacttgac catggtggga actgcaccag ggtactcctc 3700

acagcgccat caccaatggc caaaactcct ctcaacggtg acctctgggt 3750

agtcctggca tgccaacatc agcctcttgg gaggtctcta gttctctaaa 3800

gttctggaca gttctgcctc ctgccctgtc ccagtggagg cagtaattct 3850

aggagatcct aaggggttca gggggaccct accccacct caggttgggc 3900

ttccctgggc actcatgctc cacaccaaag caggacacgc cattttccac 3950

tgaccaccct ataccctgag gaaagggaga ctttcctccg atgtttattt 4000

agctgttgca aacatcttca ccctaatagt ccctcctcca attccagcca 4050

cttgtcaggc tctcctcttg accactgtgt tatgggataa ggggaggggg 4100

tgggcatatt ctggagagga gcagaggtcc aaggacccag gaatttggca 4150

tggaacaggt ggtaggagag ccccagggag acgcccagga gctggctgaa 4200

agccactttg tacatgtaat gtattatatg gggtctgggc tccagccaga 4250

gaacaatctt ttatttctgt tgtttcctta ttaaaatggt gtttttggaa 4300

aaaaaa 4306
```

<210> 75
<211> 7420
<212> DNA
<213> Homo sapien

<220>
<221> Unsure
<222> 3356, 3743, 3962, 3966, 3968, 3976, 3988

133

<223> Unknown base

<400> 75

```
gctgagcctg agcccgaccc ggggcgcctc ccgccaggca ccatggtgca 50

gaagtcgcgc aacggcggcg tataccccgg cccgagcggg gagaagaagc 100

tgaaggtggg cttcgtgggg ctggaccccg gcgcgcccga ctccacccgg 150

gacggggcgc tgctgatcgc cggctccgag gcccccaagc gcggcagcat 200

cctcagcaaa cctcgcgcgg gcggcgcggg cgccgggaag ccccccaagc 250

gcaacgcctt ctaccgcaag ctgcagaatt tcctctacaa cgtgctggag 300

cggccgcgcg gctgggcgtt catctaccac gcctacgtgt tcctcctggt 350

tttctcctgc ctcgtgctgt ctgtgttttc caccatcaag gagtatgaga 400

agagctcgga gggggccctc tacatcctgg aaatcgtgac tatcgtggtg 450

tttggcgtgg agtacttcgt gcggatctgg gccgcaggct gctgctgccg 500

gtaccgtggc tggaggggggc ggctcaagtt tgcccggaaa ccgttctgtg 550

tgattgacat catggtgctc atcgcctcca ttgcggtgct ggccgccggc 600

tcccagggca acgtctttgc cacatctgcg ctccggagcc tgcgcttcct 650

gcagattctg cggatgatcc gcatggaccg gcggggaggc acctggaagc 700

tgctgggctc tgtggtctat gcccacagca aggagctggt cactgcctgg 750

tacatcggct cctttgtct catcctggcc tcgttcctgg tgtacttggc 800

agagaagggg gagaacgacc actttgacac ctacgcggat gcactctggt 850

ggggcctgat cacgctgacc accattggct acggggacaa gtacccccag 900

acctggaacg gcaggctcct tgcggcaacc ttcaccctca tcggtgtctc 950

cttcttcgcg ctgcctgcag gcatcttggg gtctgggttt gccctgaagg 1000

ttcaggagca gcacaggcag aagcactttg agaagaggcg gaacccggca 1050

gcaggcctga tccagtcggc ctggagattc tacgccacca acctctcgcg 1100

cacagacctg cactccacgt ggcagtacta cgagcgaacg gtcaccgtgc 1150

ccatgtacag acttatcccc ccgctgaacc agctggagct gctgaggaac 1200

ctcaagagta aatctggact cgctttcagg aaggaccccc cgccggagcc 1250

gtctccaagc cagaaggtca gtttgaaaga tcgtgtcttc tccagccccc 1300

gaggcgtggc tgccaagggg aaggggtccc cgcaggccca gactgtgagg 1350

cggtcaccca gcgccgacca gagcctcgag gacagcccca gcaaggtgcc 1400
```

134

```
caagagctgg agcttcgggg accgcagccg ggcacgccag gctttccgca 1450

tcaagggtgc cgcgtcacgg cagaactcag aagaagcaag cctccccgga 1500

gaggacattg tggatgacaa gagctgcccc tgcgagtttg tgaccgagga 1550

cctgaccccg ggcctcaaag tcagcatcag agccgtgtgt gtcatgcggt 1600

tcctggtgtc caagcggaag ttcaaggaga gcctgcggcc ctacgacgtg 1650

atggacgtca tcgagcagta ctcagccggc cacctggaca tgctgtcccg 1700

aattaagagc ctgcagtcca gagtggacca gatcgtgggg cggggcccag 1750

cgatcacgga caaggaccgc accaagggcc cggccgaggc ggagctgccc 1800

gaggacccca gcatgatggg acggctcggg aaggtggaga agcaggtctt 1850

gtccatggag aagaagctgg acttcctggt gaatatctac atgcagcgga 1900

tgggcatccc cccgacagag accgaggcct actttggggc caaagagccg 1950

gagccggcgc cgccgtacca cagcccggaa gacagccggg agcatgtcga 2000

caggcacggc tgcattgtca agatcgtgcg ctccagcagc tccacgggcc 2050

agaagaactt ctcggcgccc ccggccgcgc cccctgtcca gtgtccgccc 2100

tccacctcct ggcagccaca gagccacccg cgccagggcc acggcacctc 2150

ccccgtgggg gaccacggct ccctggtgcg catcccgccg ccgcctgccc 2200

acgagcggtc gctgtccgcc tacggcgggg gcaaccgcgc cagcatggag 2250

ttcctgcggc aggaggacac cccgggctgc aggccccccg aggggaccct 2300

gcgggacagc gacacgtcca tctccatccc gtccgtggac cacgaggagc 2350

tggagcgttc cttcagcggc ttcagcatct cccagtccaa ggagaacctg 2400

gatgctctca acagctgcta cgcggccgtg gcgccttgtg ccaaagtcag 2450

gccctacatt gcggagggag agtcagacac cgactccgac ctctgtaccc 2500

cgtgcgggcc cccgccacgc tcggccaccg gcgagggtcc ctttggtgac 2550

gtgggctggg ccgggcccag gaagtgaggc ggcgctgggc cagtggaccc 2600

gcccgcggcc ctcctcagca cggtgcctcc gaggttttga ggcgggaacc 2650

ctctggggcc cttttcttac agtaactgag tgtggcggga agggtgggcc 2700

ctggaggggc ccatgtgggc tgaaggatgg gggctcctgg cagtgacctt 2750

ttacaaaagt tattttccaa cagggcactc ccaggccctg tcgccattga 2800

ggtgcctccg ctgggctgtc tcctcacccc tccctgtgct ggagcctgtc 2850
```

135

```
ccaaaaaggt gccaactggg aggcctcgga agccactgtc caggctccca 2900

ctgcctgtct gctctgttcc caaaggcagc gtgtgtggcc tcgggccctg 2950

cggtggcatg aagcatccct tctggtgtgg gcatcgctac gtgttttggg 3000

ggcagcgttt cacggcggtg cccttgctgt ctcccttggg ctggctcgag 3050

cctggggtcc atgtcccttt gccgtcccgt catggggcag ggaatccata 3100

gcggggccca caggcagggg tatgagtgcg tcccacccaa cgcagcacca 3150

gccccggcca ccgctccccg tgtccccagt tccgtctcag ctacctggac 3200

tccaggaccc tggagaaggg agacctggca gtggagggag gctgtgctgt 3250

gtgtccccct gcaggtgtga ccccgcctgc tctttcctcc cccgccaggt 3300

gtggccccgc ctgctctttc ctcccccacc agtatggccc cacctgctct 3350

ttcctncccc cccaaggtgt ggccccacct gttctttcct cccctgccga 3400

ggtgtgaccc cacctgctct ttcctccctc ccagtatggc cccacctgct 3450

ctttcctccc ccgaggtgag gccccgcctg ctctttcctc ccatgggagc 3500

cgctgaggcg tgcgcacctg ggcacaggtt ggggctctgc aggatgagga 3550

agacaggcca atcccttccc tcccagaagc tggccgccca gcaggaggga 3600

ctgaggccag actcatgtcc agcaaggaac gtgtggtgtg tcccctggga 3650

agtctctggg ccctgggaag agggaaggtg cacgtcctgg gatggttgcg 3700

gggccctgtt ttgggagaca aaggggtaga gggtctgtct tgngcccccc 3750

cagactctag cccgagcagt gcagccacct actgccccac ctcagagaag 3800

tgcagcggga aggaggctgg aggtggtgcg gcgctgcctc gggtgtctgc 3850

gtgaatgagc gtggccaagg accagtgcca cctcatggca aagagctccc 3900

gcagtgtttg ttagagtgca catcctacgt gcccactggc acacacacgt 3950

gctcacatac angtcngngt acaggngtac acatgcangc ttgcacacat 4000

gcacacagac cacatagcac acatgtgcac tgaccacacc tgtatagacc 4050

atgcacagta cacatacgtg catacacatg cctgcataca ggcatacaca 4100

tgcacgctta catgtacacg tgcacagatc acacacatgc acacgtgt 4150

agctcacaca cagtatacac atacacaagt gcacagacca cacacagcac 4200

taacacatgc acacacaaag tgcataggcc acacagcaca tgcacacagg 4250

tgcacagacc acacagcaca cacaagtgca cagagcacac tgcacacatg 4300
```

136

cacacacaca cgcgtgcatg cacactcctc gcacttccag ccttggagcc 4350

cttctgtctc tggtctttct ctttgaccct gctgagtgta agctgcctgg 4400

ggaggggcta caaggagtaa ttgtggcttt aggggtcgtg gtgatgctgg 4450

aatgtcaagc gccgtcgtgg ggtatccgac tgtccgggct cctggtccgc 4500

agtggcagag cgccaggcag agccaatcag ggtctcgtgc tgcccttccc 4550

ccccacagcc tggcagccat ccagaggagg ggctctacca gatgccaagg 4600

tgccccggtg tctgtatggg tgtccggttg ggtcctgtgt ttggtctgcc 4650

ctggaggtgg ctgggccctc ctgggatggg tggctcagcc tcgaatccca 4700

ggccccagcc caggcaggtg ctgctgcctg ttgtggtttc ctggcccagc 4750

ttctccttct ccctctgcat aaaatcacag tccgtgagtc ttccagctgc 4800

caccacggct gggacacgct gggggagggc tcctcccatg cctcctgcac 4850

acagccgtct gagcagggca ggtgccaaca ccccccaccg gagacacgct 4900

gcccctcagc gatgccccta ccttttgggg ggcctcgtct caagcccccc 4950

cttggaggct gaaatcaccc caggcactgt gagggcttct ccagggggac 5000

accctttgag ctgtgggtct gatcacccca agtcccgcac acggaggaga 5050

ggcacagcca gggcgtgtgg tttaatgttt gccccttcgg ggctggaggt 5100

ctcagtgttt ctagattcca gaccctgctg ccagagagac ctgctgccgg 5150

agagaagggg aggaggactc cagctgggct cggtccccca cagtcaggga 5200

cccccataaa ggacaccccc ttctctctag aaagagctgg gctctcagct 5250

atttctagtt gcttcccaga agccgaggag cagaaggagc tgtgagagct 5300

ttgcagaaac gcccttgtcc ccgccctcct gagctatgaa tgccgtacag 5350

agcagaggct ggggcattgg caagatcaca ggttgatgct gcacagcccc 5400

attgacacaa accctcaaag cagacgtgag agggacggtt cacaaagctt 5450

ggacctgccg tggagggtgc ccggcagacg tggcgtgaga gggacggctc 5500

acgaggcttg gacctgctgt ggagggtgcc cagcagacgt ggtgtgagag 5550

gaacggctca cgagacttgg acctggtgga gggtgcccag cagacgtggt 5600

gtgagaggga cggctcacag gcttggacc ggagagagat ggctcatgag 5650

acttggacct gccgtggagg gtgcccagca gacgtggtat gagagggatg 5700

gctcacgagg cttggacctg gtggagggtg cccggcagac gtgtgagagg 5750

```
gacggttcac aaggcttgga cctgccatgg agggtgccca gcagacgtgg 5800

tgtgagaggg acagctcacg aggcttggac ctgccgtgga gggtgcccag 5850

cagggggctg agctctgagg ggtggggtgct cagtgcacgg gtgcccccag 5900

tgtcctctga tcctgtccgg tgcctcccct aaccccaca cccatgcaga 5950

actcccaggt cacatgcacg tatgtccagg gcatgggggt ggcgtgaaga 6000

ggcctggtca gggcctttag gggctgcagg acggaatggc cacctgggga 6050

gcctgtgtgg ctgtgccggg cagccatcct gcattcccac ccagcgcgca 6100

gtctccacct cggccccagc aaagcgctaa gcagccggag agacagccag 6150

ggcggcttcc tgaaggatgt gggatggtgg actccggggt cgagggaata 6200

cgcaggttcc tgtcctccgg gagacctaga gaagctgcac acccaggagc 6250

tttccatgac ccgggagcat gagtgaatgg ggggttccag tttgctgaac 6300

tttgctgtct tgtaagggtg ggggctgacg gccgaccctg ggaggaggtg 6350

acaccgcagg gggaggttgt gggcaacggt ggaggaggag agacgggagg 6400

ggaccatttg ggatggaggg gcctcttcag agttttaaaa ggcgtttgtg 6450

gggtggagtt gagtgtgctc tgggcttgga cacttgccgt ggtgcccctg 6500

gctggccgag gagactggct ctggccaggg ccccgtcctg agaggtcctc 6550

agcgtctgac tctcggccag gcgccagcaa ggagggggccg gtccccgggg 6600

ctaccaggca ggcacgtgca catcgccatc gccacacgcc aactccgcct 6650

gggtttttaca aagtcgttgc cttaatgcat gtggacagga actccctgag 6700

gtcgccccat gcccccctggc tgtgccaggt acggacgccc tggaccctgc 6750

gaacaggtgg ggcgggcgag gggcccaagg gacgggctcc agagacacgc 6800

gcagggcagg aggggtctca cggaggggtc tcgcactgag gcgcccagag 6850

ctggtggtcc cgctggacgc catccctctg cccgggatcc acacggccca 6900

cgtgtgcccg ccatgcccgc gccccacgcc attgcagtct tccatcctct 6950

ggccgtgacg gtggctgcag cttccccatt tgcgccgttg cctctggctg 7000

tctgcacttt tgttcatgct ccaaagaaca tttcataatg ccttcagtac 7050

cgacgtacac ttctgaccat tttgtatgtg tccttgtgcc gtagtgacca 7100

ggcctttttt tggtggatgt gttaccccgc acacttcaat ctcaactttg 7150

tgcaccgtcc attttctagg gatagacgcc cagggaatga actctagttt 7200
```

138

```
tctaacagat tagctgagat attaacttac tcacacggac aggttgatgc 7250

cagagccgta agaatgcgcc agtgcgggtt tgcgggggac ttcgggtgtg 7300

gggtcctgcg gccgcgatgg ccgtggaagg ttctgggggat ccctgctgcc 7350

acggggacga gttcggacgc caggtggacc tgtgcactca gtaaaacgca 7400

gtgattcaaa aaaaaaaaaa 7420
```

<210> 76
<211> 1433
<212> DNA
<213> Homo sapien

<400> 76
```
ggcacgaggc aagtccggat gaagaattaa gagaaaaaaa gtgaatatgg 50

ttttttgctca cagaatggat aacagcaagc cacatttgat tattcctaca 100

cttctggtgc ccctccaaaa ccgcagctgc actgaaacag ccacacctct 150

gccaagccaa tacctgatgg aattaagtga ggagcacagt tggatgagca 200

accaaacaga ccttcactat gtgctgaaac ccgggggaagt ggccacagcc 250

agcatcttct ttgggattct gtggttgttt tctatcttcg gcaattccct 300

ggtttgtttg gtcatccata ggagtaggag gactcagtct accaccaact 350

actttgtggt ctccatggca tgtgctgacc ttctcatcag cgttgccagc 400

acgcctttcg tcctgctcca gttcaccact ggaaggtgga cgctgggtag 450

tgcaacgtgc aaggttgtgc gatattttca atatctcact ccaggtgtcc 500

agatctacgt tctcctctcc atctgcatag accggttcta caccatcgtc 550

tatcctctga gcttcaaggt gtccagagaa aaagccaaga aaatgattgc 600

ggcatcgtgg atctttgatg caggctttgt gaccccctgtg ctcttttttct 650

atggctccaa ctgggacagt cattgtaact atttcctccc ctcctcttgg 700

gaaggcactg cctacactgt catccacttc ttggtgggct ttgtgattcc 750

atctgtcctc ataattttat tttaccaaaa ggtcataaaa tatatttgga 800

gaataggcac agatggccga acggtgagga ggacaatgaa cattgtccct 850

cggacaaaag tgaaaactat caagatgttc ctcattttaa atctgttgtt 900

tttgctctcc tggctgcctt ttcatgtagc tcagctatgg cacccccatg 950

aacaagacta taagaaaagt tcccttgttt tcacagctat cacatggata 1000

tcctttagtt cttcagcctc taaacctact ctgtattcaa tttataatgc 1050
```

139

```
caattttcgg agagggatga aagagacttt ttgcatgtcc tctatgaaat 1100

gttaccgaag caatgcctat actattacaa caagttcaag gatggccaaa 1150

aaaaactacg ttggcatttc agaaatccct tccatggcca aaactattac 1200

caaagactcg atctatgact catttgacag agaagccaag gaaaaaaagc 1250

ttgcttggcc cattaactca aatccaccaa atactttgt ctaagttctc 1300

attctttcaa ttgttatgca ccagagatta aaaagcttta actataaaaa 1350

cagaagctat ttacatattt gttttcactc aactttccaa gggaaatgtt 1400

ttattttgta aaatgcattc atttgtttac tgt 1433
```
<210> 77
<211> 3561
<212> DNA
<213> Homo sapien

<400> 77
```
gccatggccg tccggcccgg cctgtggcca gcgctcctgg gcatagtcct 50

cgccgcttgg ctccgcggct cgggtgccca gcagagtgcc accgtggcca 100

acccagtgcc tggtgccaac ccggacctgc ttccccactt cctggtggag 150

cccgaggatg tgtacatcgt caagaacaag ccagtgctgc ttgtgtgcaa 200

ggccgtgccc gccacgcaga tcttcttcaa gtgcaacggg gagtgggtgc 250

gccaggtgga ccacgtgatc gagcgcagca cagacgggag cagtgggctg 300

cccaccatgg aggtccgcat taatgtctca aggcagcagg tcgagaaggt 350

gttcgggctg gaggaatact ggtgccagtg cgtggcatgg agctcctcgg 400

gcaccaccaa gagtcagaag gcctacatcc gcatagccta tttgcgcaag 450

aacttcgagc aggagccgct ggccaaggag gtgtccctgg agcagggcat 500

cgtgctgccc tgccgtccac cggagggcat ccctccagcc gaggtggagt 550

ggctccggaa cgaggacctg gtggacccgt ccctggaccc caatgtatac 600

atcacgcggg agcacagcct ggtggtgcga caggcccgcc ttgctgacac 650

ggccaactac acctgcgtgg ccaagaacat cgtggcacgt cgccgcagcg 700

cctccgctgc tgtcatcgtc tacgtggacg gcagctggag cccgtggagc 750

aagtggtcgg cctgtgggct ggactgcacc cactggcgga ccgtgagtg 800

ctctgaccca gcaccccgca acggagggga ggagtgccag ggcactgacc 850

tggacacccg caactgtacc agtgacctct gtgtacacac tgcttctggc 900
```

```
cctgaggacg tggccctcta tgtgggcctc atcgccgtgg ccgtctgcct 950

ggtcctgctg ctgcttgtcc tcatcctcgt ttattgccgg aagaaggagg 1000

ggctggactc agatgtggct gactcgtcca ttctcacctc aggcttccag 1050

cccgtcagca tcaagcccag caaagcagac aaccccatc tgctcaccat 1100

ccagccggac ctcagcacca ccaccaccac ctaccagggc agtctctgtc 1150

cccggcagga tgggcccagc cccaagttcc agctcaccaa tgggcacctg 1200

ctcagccccc tgggtggcgg ccgccacaca ctgcaccaca gctctcccac 1250

ctctgaggcc gaggagttcg tctcccgcct ctccacccag aactacttcc 1300

gctccctgcc ccgaggcacc agcaacatga cctatgggac cttcaacttc 1350

ctcgggggcc ggctgatgat ccctaataca ggaatcagcc tcctcatccc 1400

cccagatgcc ataccccgag ggaagatcta tgagatctac ctcacgctgc 1450

acaagccgga agacgtgagg ttgcccctag ctggctgtca gaccctgctg 1500

agtcccatcg ttagctgtgg accccctggc gtcctgctca cccggccagt 1550

catcctggct atggaccact gtggggagcc cagccctgac agctggagcc 1600

tgcgcctcaa aaagcagtcg tgcgagggca gctgggagga tgtgctgcac 1650

ctgggcgagg aggcgccctc ccacctctac tactgccagc tggaggccag 1700

tgcctgctac gtcttcaccg agcagctggg ccgctttgcc ctggtgggag 1750

aggccctcag cgtggctgcc gccaagcgcc tcaagctgct tctgtttgcg 1800

ccggtggcct gcacctccct cgagtacaac atccgggtct actgcctgca 1850

tgacacccac gatgcactca aggaggtggt gcagctggag aagcagctgg 1900

ggggacagct gatccaggag ccacgggtcc tgcacttcaa ggacagttac 1950

cacaacctgc gcctatccat ccacgatgtg cccagctccc tgtggaagag 2000

taagctcctt gtcagctacc aggagatccc cttttatcac atctggaatg 2050

gcacgcagcg gtacttgcac tgcaccttca ccctggagcg tgtcagcccc 2100

agcactagtg acctggcctg caagctgtgg gtgtggcagg tggagggcga 2150

cgggcagagc ttcagcatca acttcaacat caccaaggac acaaggtttg 2200

ctgagctgct ggctctggag agtgaagcgg gggtcccagc cctggtgggc 2250

cccagtgcct tcaagatccc cttcctcatt cggcagaaga taatttccag 2300

cctggaccca ccctgtaggc ggggtgccga ctggcggact ctggcccaga 2350
```

141

```
aactccacct ggacagccat ctcagcttct ttgcctccaa gcccagcccc 2400

acagccatga tcctcaacct gtgggaggcg cggcacttcc ccaacggcaa 2450

cctcagccag ctggctgcag cagtggctgg actgggccag ccagacgctg 2500

gcctcttcac agtgtcggag gctgagtgct gaggccggcc aggcccgaca 2550

cctacactct caccagcttt ggcacccacc aaggacaggc agaagccgga 2600

cagggccct tccccacacc ggggagagct gctcggacag gcccctccc 2650

ggccgaagct gtcccttaat gctggtcctt cagaccctgc ccgaactccc 2700

acctctccat ggcctgccta gccaggctgg cactgccact cacactcggc 2750

cccagggccc aggagggaca gtgcctggag cctgggccag gcccagccca 2800

tctgtgtgtg tgtatgtgcg tgtgatgcta cctctcctcc cgtccctctc 2850

cagggcccc gcatacacac ggccatgcac gcacacactg ggcctgggcc 2900

agggccccag agctcctgcc tgagctggac cttatgcaaa catttctgtg 2950

cctgctgggt aggggcacgt ctgaggggcc ctgctccaag cctgcaggac 3000

cgagggccac agccggacag ggggtagccc ctggattcag gcacacgacc 3050

accacacgag cacgtgccac gcatgcctcg tgtgctcatc tcacacacac 3100

cccctcccg ggtcacgcag acacccccca accacacaca tctcatgccg 3150

tacacctgag gctgctcacg tctcacgccc agtgttggtg cacatttgcc 3200

tctcacatgc tgccctctcc acccacccag ggacacccca cggctcctcc 3250

ctgcccctgc ccctccccca gccttgaggt gccctgcccg gcggggcctg 3300

tgaatatgca atgggagtcc caggctgtac agtggtgagt gtgtgtgtgg 3350

cgtggcgtgc ccgtccccag ggctggctgg tgccccacgc ggggcctgtc 3400

atgtgaagct cgtgtcctga ctttgtctta agtgcattca cgcacttact 3450

cttggcctta tgtacacagc cttgcccggc cgccggggca cataggggtt 3500

ttatcgggcg tgaatgtaaa taaattatat atatatattg ctaaaaaaaa 3550

aaaaaaaaaa a 3561
```

<210> 78
<211> 4153
<212> DNA
<213> Homo sapien

<400> 78
```
 taaggtaatt cgtatgcaag aagctacacg taattaaatg tgcaggatga 50
```

142

```
aaagatggca caggcactgt tggtaccccc aggacctgaa agcttccgcc 100

ttttactag agaatctctt gctgctatcg aaaaacgtgc tgcagaagag 150

aaagccaaga agcccaaaaa ggaacaagat aatgatgatg agaacaaacc 200

aaagccaaat agtgacttgg aagctggaaa gaaccttcca tttatttatg 250

gagacattcc tccagagatg gtgtcagagc ccctggagga cctggatccc 300

tactatatca ataagaaaac ttttatagta atgaataaag gaaaggcaat 350

tttccgattc agtgccacct ctgccttgta tattttaact ccactaaacc 400

ctgttaggaa aattgctatc aagattttgg tacattcttt attcagcatg 450

cttatcatgt gcactatttt gaccaactgt gtatttatga ccttgagcaa 500

ccctcctgac tggacaaaga atgtagagta cacattcact ggaatctata 550

cctttgagtc acttataaaa atcttggtaa gagggttttg cttagaagat 600

tttacgtttc ttcgtgatcc atggaactgg ctggatttca gtgtcattgt 650

gatggcgtat gtaacagaat ttgtaagcct aggcaatgtt tcagcccttc 700

gaactttcag agtcttgaga gctctgaaaa ctatttctgt aattccaggt 750

ttaaagacca ttgtgggggc cctgatccag tcggtaaaga agctttctga 800

tgtgatgatc ctgactgtgt tctgtctgag cgtgtttgct ctcattgggc 850

tgcagctgtt catgggcaat ctgaggaata aatgtttgca gtggccccca 900

agcgattctg cttttgaaac caacaccact tcctacttta atggcacaat 950

ggattcaaat gggacatttg ttaatgtaac aatgagcaca tttaactgga 1000

aggataacat tggagatgac agtcactttt atgttttgga tgggcaaaaa 1050

gaccctttac tctgtggaaa tggttcagat gcaggccagt gtccagaagg 1100

atacatctgt gtgaaggctg gtcgaaaccc caactatggc tacacaagct 1150

ttgacacctt tagctgggct ttcctgtctc tatttcgact catgactcaa 1200

gactactggg aaaatcttta ccagttgaca ttacgtgctg ctgggaaaac 1250

atacacgata ttttttgtcc tggtcatttt cttgggctca ttttatttgg 1300

tgaatttgat cctggctgtg gtggccatgg cctatgagga gcagaatcag 1350

gccaccttgg aagaagcaga acaaaaagag gccgaatttc agcagatgct 1400

cgaacagctt aaaaagcaac aggaagaagc tcaggcagtt gcggcagcat 1450

cagctgcttc aagagatttc agtggaatag gtgggttagg agagctgttg 1500
```

143

```
gaaagttctt cagaagcatc aaagttgagt tccaaaagtg ctaaagaatg 1550

gaggaaccga aggaagaaaa gaagacagag agagcacctt gaaggaaaca 1600

acaaaggaga gagagacagc tttcccaaat ccgaatctga agacagcgtc 1650

aaaagaagca gcttcctttt ctccatggat ggaaacagac tgaccagtga 1700

caaaaaattc tgctcccctc atcagtctct cttgagtatc cgtggctccc 1750

tgttttcccc aagacgcaat agcaaaacaa gcattttcag tttcagaggt 1800

cgggcaaagg atgttggatc tgaaaatgac tttgctgatg atgaacacag 1850

cacatttgaa gacagcgaaa cgaggagaga ctcactgttt gagccgcaca 1900

gacatggaga gcgacgcaac agtaacggca ccaccacaga aacggaggtc 1950

agaaagagaa ggttaagttc ttaccagatt tcaatggaga tgctggagga 2000

ttcttctgga aggcaaagag ccgtgagcat agccagcatt ctgaccaaca 2050

caatggaaga acttgaagaa tctagacaga aatgtccgcc atgctggtat 2100

agatttgcca atgtgttctt gatctgggac tgctgtgatg catggttaaa 2150

agtaaaacat cttgtgaatt taattgttat ggatccattt gttgatcttg 2200

ccatcactat ttgcattgtc ttaaataccc tctttatggc catggagcac 2250

taccccatga ctgagcaatt cagtagtgtg ttgactgtag gaaacctggt 2300

ctttactggg attttcacag cagaaatggt tctcaagatc attgccatgg 2350

atccttatta ctatttccaa gaaggctgga atatctttga tggaattatt 2400

gtcagcctca gtttaatgga gcttggtctg tcaaatgtgg agggattgtc 2450

tgtactgcga tcattcagac tgcttagagt tttcaagttg gcaaaatcct 2500

ggcccacact aaatatgcta attaagatca ttggcaattc tgtggggget 2550

ctaggaaacc tcaccttggt gttggccatc atcgtcttca tttttgctgt 2600

ggtcggcatg cagctctttg gtaagagcta caagaatgt gtctgcaaga 2650

tcaatgatga ctgtacgctc ccacggtggc acatgaacga cttcttccac 2700

tccttcctga ttgtgttccg cgtgctgtgt ggagagtgga tagagaccat 2750

gtgggactgt atggaggtcg ctggccaaac catgtgcctt attgtttca 2800

tgttggtcat ggtcattgga aaccttgtgg ttctgaacct ctttctggcc 2850

ttattgttga gttcatttag ctcagacaac cttgctgcta ctgatgatga 2900

caatgaaatg aataatctgc agattgcagt aggaagaatg caaaagggaa 2950
```

```
ttgattatgt gaaaaataag atgcgggagt gtttccaaaa agcctttttt 3000

agaaagccaa aagttataga aatccatgaa ggcaataaga tagacagctg 3050

catgtccaat aatactggaa ttgaaataag caaagcgctt aattatctta 3100

gagatgggaa tggaaccacc agtggtgtag gtactggaag cagtgttgaa 3150

aaatacgtaa tcgatgaaaa tgattatatg tcattcataa acaaccccag 3200

cctcaccgtc acagtgccaa ttgctgttgg agagtctgac tttgaaaact 3250

taaatactga agagttcagc agtgagtcag aactagaaga aagcaaagag 3300

aaattaaatg caaccagctc atctgaagga agcacagttg atgttgttct 3350

accccgagaa ggtgaacaag ctgaaactga acccgaagaa gaccttaaac 3400

cggaagcttg ttttactgaa ggatgtatta aaaagtttcc attctgtcaa 3450

gtaagtacag aagaaggcaa agggaagatc tggtggaatc ttcgaaaaac 3500

ctgctacagt attgttgagc acaactggtt tgagactttc attgtgttca 3550

tgatccttct cagtagtggt gcattggcct ttgaagatat atacattgaa 3600

cagcgaaaga ctatcaaaac catgctagaa tatgctgaca aagtctttac 3650

ctatatattc attctggaaa tgcttctcaa atgggttgct tatggatttc 3700

aaacatattt cactaatgcc tggtgccggc tagatttctt gatcgttgat 3750

gtttctttgg ttagcctggt agccaatgct cttggctact cagaactcgg 3800

tgccatcaaa tcattacgga cattaagagc tttaagacct ctaagagcct 3850

tatcccggtt tgaaggcatg agggtggttg tgaatgctct tgttggagca 3900

attccctcta tcatgaatgt gctgttggtc tgtctcatct tctggttgat 3950

ctttagcatc atgggtgtga atttgtttgc tggcaagttc taccactgtg 4000

ttaacatgac aacgggtaac atgtttgaca ttagtgatgt taacaatttg 4050

agtgactgtc aggctcttgg caagcaagct cggtggaaaa acgtgaaagt 4100

aaactttgat aatgttggcg ctggctatct tgcactgctt caagtggtaa 4150

gtg 4153
```

<210> 79
<211> 8976
<212> DNA
<213> Homo sapien

<400> 79
```
agcgaagcgg aggcataagc agagaggatt ctggaaaggt ctctttgttt 50
```

```
tcttatccac agagaaagaa agaaaaaaaa ttgtaactaa tttgtaaacc 100

tctgtggtca aaaaaaaaaa aaaaaaaaaa gctgaacagc tgccagagga 150

agacacgtta taccctaacc atcttggatg ctgggctttg ttatgctgta 200

attcataagg ctctgtttta tcagagatta tggagcaaga aaactgaagc 250

caagccacat caaggtttga cagggatgag atacctgtca aggattcata 300

gtagagtggc ttactgggaa aggagcaaag aatctcttct agggatattg 350

taagaataaa tgagataatt cacagaaggg acctggagct tttccggaaa 400

aaggtgctgt gactatctaa ggtaattcgt atgcaagaag ctacacgtaa 450

ttaaatgtgc aggatgaaaa gatggcacag gcactgttgg tacccccagg 500

acctgaaagc ttccgccttt ttactagaga atctcttgct gctatcgaaa 550

aacgtgctgc agaagagaaa gccaagaagc ccaaaaagga acaagataat 600

gatgatgaga acaaaccaaa gccaaatagt gacttggaag ctggaaagaa 650

ccttccattt atttatggag acattcctcc agagatggtg tcagagcccc 700

tggaggacct ggatccctac tatatcaata agaaaacttt tatagtaatg 750

aataaaggaa aggcaatttt ccgattcagt gccacctctg ccttgtatat 800

tttaactcca ctaaaccctg ttaggaaaat tgctatcaag attttggtac 850

attctttatt cagcatgctt atcatgtgca ctattttgac caactgtgta 900

tttatgacct tgagcaaccc tcctgactgg acaaagaatg tagagtacac 950

attcactgga atctatacct ttgagtcact tataaaaatc ttggcaagag 1000

ggttttgctt agaagatttt acgtttcttc gtgatccatg gaactggctg 1050

gatttcagtg tcattgtgat ggcatatgtg acagagtttg tggacctggg 1100

caatgtctca gcgttgagaa cattcagagt tctccgagca ctgaaaacaa 1150

tttcagtcat tccaggttta aagaccattg tgggggccct gatccagtcg 1200

gtaaagaagc tttctgatgt gatgatcctg actgtgttct gtctgagcgt 1250

gtttgctctc attgggctgc agctgttcat gggcaatctg aggaataaat 1300

gtttgcagtg gcccccaagc gattctgctt ttgaaaccaa caccacttcc 1350

tactttaatg gcacaatgga ttcaaatggg acatttgtta atgtaacaat 1400

gagcacattt aactggaagg attacattgg agatgacagt cacttttatg 1450

ttttggatgg gcaaaaagac cctttactct gtggaaatgg ctcagatgca 1500
```

```
ggccagtgtc cagaaggata catctgtgtg aaggctggtc gaaaccccaa 1550

ctatggctac acaagctttg acacctttag ctgggctttc ctgtctctat 1600

ttcgactcat gactcaagac tattgggaaa atctttacca gttgacatta 1650

cgtgctgctg ggaaaacata catgatattt tttgtcctgg tcattttctt 1700

gggctcattt tatttggtga atttgatcct ggctgtggtg gccatggcct 1750

atgaggagca gaatcaggcc accttggaag aagcagaaca aaaagaggcc 1800

gaatttcagc agatgctcga acagcttaaa aagcaacagg aagaagctca 1850

ggcagttgcg gcagcatcag ctgcttcaag agatttcagt ggagtaggtg 1900

ggttaggaga gctgttggaa agttcttcag aagcatcaaa gttgagttcc 1950

aaaggtgcta aagaatggag gaaccggagg aagaaaagaa gacagagaga 2000

gcaccttgaa ggaaacaaca aaggagagag agacagcttt cccaaatccg 2050

aatctgaaga cagcgtcaaa agaagcagct tccttttctc catggatgga 2100

aacagactga ccagtgacaa aaaattctgc tcccctcatc agtctctctt 2150

gagtatccgt ggctccctgt tttccccaag acgcaatagc aaaacaagca 2200

ttttcagttt cagaggtcgg gcaaaggatg ttggatctga aaatgacttt 2250

gctgatgatg aacacagcac atttgaagac agcgaaagca ggagagactc 2300

actgtttgtg ccgcacagac atggagagcg acgcaacagt aacggcacca 2350

ccactgaaac ggaagtcaga aagagaaggt taagctctta ccagatttca 2400

atggagatgc tggaggattc ctctggaagg caaagagccg tgagcatagc 2450

cagcattctg accaacacaa tggaagaact tgaagaatct agacagaaat 2500

gtccgccatg ctggtataga tttgccaatg tgttcttgat ctgggactgc 2550

tgtgatgcat ggttaaaagt aaaacatctt gtgaatttaa ttgttatgga 2600

tccatttgtt gatcttgcca tcactatttg cattgtctta aataccctct 2650

ttatggccat ggagcactac cccatgactg agcaattcag tagtgtgttg 2700

actgtaggaa acctggtctt tactgggatt ttcacagcag aaatggttct 2750

caagatcatt gccatggatc cttattacta tttccaagaa ggctggaata 2800

tctttgatgg aattattgtc agcctcagtt taatggagct tggtctgtca 2850

aatgtggagg gattgtctgt actgcgatca ttcagactgc ttagagtttt 2900

caagttggca aaatcctggc ccacactaaa tatgctaatt aagatcattg 2950
```

147

```
gcaattctgt gggggctcta ggaaacctca ccttggtgtt ggccatcatc 3000

gtcttcattt ttgctgtggt cggcatgcag ctctttggta agagctacaa 3050

agaatgtgtc tgcaagatca atgatgactg tacgctccca cggtggcaca 3100

tgaacgactt cttccactcc ttcctgattg tgttccgcgt gctgtgtgga 3150

gagtggatag agaccatgtg ggactgtatg gaggtcgctg gccaaaccat 3200

gtgccttatt gttttcatgt tggtcatggt cattggaaac cttgtggttc 3250

tgaacctctt tctggcctta ttattgagtt catttagctc agacaacctt 3300

gctgctactg atgatgacaa tgaaatgaat aatctgcaga ttgcagtagg 3350

aagaatgcaa aagggaattg attatgtgaa aaataagatg cgggagtgtt 3400

tccaaaaagc cttttttaga aagccaaaag ttatagaaat ccatgaaggc 3450

aataagatag acagctgcat gtccaataat actggaattg aaataagcaa 3500

agagcttaat tatcttagag atgggaatgg aaccaccagt ggtgtaggta 3550

ctggaagcag tgttgaaaaa tacgtaatcg atgaaaatga ttatatgtca 3600

ttcataaaca accccagcct caccgtcaca gtgccaattg ctgttggaga 3650

gtctgacttt gaaaacttaa atactgaaga gttcagcagt gagtcagaac 3700

tagaagaaag caaagagaaa ttaaatgcaa ccagctcatc tgaaggaagc 3750

acagttgatg ttgttctacc ccgagaaggt gaacaagctg aaactgaacc 3800

cgaagaagac tttaaaccgg aagcttgttt tactgaaggg tgtattaaaa 3850

agtttccatt ctgtcaagta agtacagaag aaggcaaagg gaagatctgg 3900

tggaatcttc gaaaaacctg ctacagtatt gttgagcaca actggtttga 3950

gactttcatt gtgttcatga tccttctcag tagtggtgca ttggcctttg 4000

aagatatata cattgaacag cgaaagacta tcaaaaccat gctagaatat 4050

gctgacaaag tctttaccta tatattcatt ctggaaatgc ttctcaaatg 4100

ggttgcttat ggatttcaaa catatttcac taatgcctgg tgctggctag 4150

atttcttgat cgttgatgtt tctttggtta gcctggtagc caatgctctt 4200

ggctactcag aactcggtgc catcaaatca ttacggacat aagagctttt 4250

aagacctcta agagccttat cccggtttga aggcatgagg gtggttgtga 4300

atgctcttgt tggagcaatt ccctctatca tgaatgtgct gttggtctgt 4350

ctcatcttct ggttgatctt tagcatcatg ggtgtgaatt tgtttgctgg 4400
```

148

```
caagttctac cactgtgtta acatgacaac gggtaacatg tttgacatta 4450

gtgatgttaa caatttgagt gactgtcagg ctcttggcaa gcaagctcgg 4500

tggaaaaacg tgaaagtaaa ctttgataat gttggcgctg gctatcttgc 4550

actgcttcaa gtggccacat ttaaaggctg gatggatatt atgtatgcag 4600

ctgttgattc acgagatgtt aaacttcagc ctgtatatga agaaaatctg 4650

tacatgtatt tatactttgt catctttatc atctttgggt cattcttcac 4700

tctgaatcta ttcattggtg tcatcataga taacttcaac cagcagaaaa 4750

agaagtttgg aggtcaagac atctttatga cagaggaaca gaaaaaatat 4800

tacaatgcaa tgaagaaact tggatccaag aaacctcaga aacccatacc 4850

tcgcccagca aacaaattcc aaggaatggt ctttgatttt gtaaccagac 4900

aagtctttga tatcagcatc atgatcctca tctgcctcaa catggtcacc 4950

atgatggtgg aaacggatga ccagggcaaa tacatgaccc tagttttgtc 5000

ccggatcaac ctagtgttca ttgttctgtt cactggagaa tttgtgctga 5050

agctcgtttc cctcagacac tactacttca ctataggctg gaacatcttt 5100

gactttgtgg tggtgattct ctccattgta ggtatgtttc tggctgagat 5150

gatagaaaag tattctgtgt cccctacctt gttccgagtg atccgtcttg 5200

ccaggattgg ccgaatccta cgtctgatca aaggagcaaa ggggatccgc 5250

acgctgctct ttgctttgat gatgtccctt cctgcgttgt ttaacatcgg 5300

cctcctgctc ttcctggtca tgtttatcta tgccatcttt gggatgtcca 5350

actttgccta tgttaaaaag gaagctggaa ttgatgacat gttcaacttt 5400

gagacctttg gcaacagcat gatctgcttg ttccaaatta caacctctgc 5450

tggctgggat ggattgctag cacctattct taatagtgca ccacccgact 5500

gtgaccctga cacaattcac cctggcagct cagttaaggg agaccgtggg 5550

gacccatctg ttgggatttt cttttttgtc agttacatca tcatatcctt 5600

cctggttgtg gtgaacatgt acatcgcggt catcctggag aacttcagtg 5650

ttgctactga agaaagtgca gagcccctga gtgaggatga ctttgagatg 5700

ttctatgagg tttgggaaaa gtttgatccc gatgcgaccc agtttataga 5750

gttctctaaa ctctctgatt ttgcagctgc cctggatcct cctcttctca 5800

tagcaaaacc caacaaagtc cagcttattg ccatggatct gcccatggtc 5850
```

149

```
agtggtgacc ggatccactg tcttgatatt ttatttgcct ttacaaagcg 5900

tgttttgtgt gagagtggag agatggatgc ccttcgaata cagatggaag 5950

acaggtttat ggcatcaaac ccctccaaag tctcttatga gcctattaca 6000

accactttga aacgtaaaca agaggaggtg tctgccgcta tcattcagcg 6050

taatttcaga tgttatcttt taaagcaaag gttaaaaaat atatcaagta 6100

actataacaa agaggcaatt aaagggagga ttgacttacc tataaaacaa 6150

gacatgatta ttgacaaact aaatgggaac tccactccag aaaaaacaga 6200

tgggagttcc tctaccacct ctcctccttc ctatgatagt gtaacaaaac 6250

cagacaagga aaagtttgag aaagacaaac cagaaaaaga aagcaaagga 6300

aaagaggtca gagaaaatca aaagtaaaaa gaaacaaaga attatctttg 6350

tgatcaattg tttacagcct atgaaggtaa agtatatgtg tcaactggac 6400

ttcaagagga ggtccatgcc aaactgactg ttttaacaaa tactcatagt 6450

cagtgcctat acaagacagt gaagtgacct ctctgtcact gcaactctgt 6500

gaagcagggt atcaacgttg acaagaggtt gctgttttta ttaccagctg 6550

acactgctga ggagaaaccc aatggctacc tagactatag ggatagttgt 6600

gcaaagtgaa cattgtaact acaccaaaca cctttagtac agtccttgca 6650

tccattctat ttttaacttc catatctgcc atattttac aaaatttgtt 6700

ctagtgcatt tccatggtcc ccaattcata gtttattcat aatgctatgt 6750

cactattttt gtaaatgagg tttacgttga agaaacagta tacaagaacc 6800

ctgtctctca aatgatcaga caaaggtgtt ttgccagaga gataaaattt 6850

ttgctcaaaa ccagaaaaag aattgtaatg ctacagtttt cagttacttc 6900

cattttctag atggctttaa ttttgaaagt attttagtct gttatgtttg 6950

tttctatctg aacagttatg tgcctgtaaa gtctcctcta atatttaaag 7000

gattattttt atgcaaagta ttctgtttca gcaagtgcaa attttattct 7050

aagtttcaga gctctatatt taatttaggt caaatgcttt ccaaaaagta 7100

atctaataaa tccattctag aaaaatatat ctaaagtatt gctttagaat 7150

agttgttcca ctttctgctg cagtattgct ttgccatctt ctgctctcag 7200

caaagctgat agtctatgtc aattaaatac cctatgttat gtaaatagtt 7250

attttatcct gtggtgcatg tttgggcaaa tatatatata gcctgataaa 7300
```

150

```
caacttctat taaatcaaat atgtaccaca gtgtatgtgt cttttgcaag 7350

cttccaacag ggatgtatcc tgtatcattc attaaacata gtttaaaggc 7400

tatcactaat gcatgttaat attgcctatg ctgctctatt ttactcaatc 7450

cattcttcac aagtcttggt taaagaatgt cacatattgg tgatagaatg 7500

aattcaacct gctctgtcca ttatgtcaag cagaataatt tgaagctatt 7550

tacaaacacc tttacttttg cacttttaat tcaacatgag tatcatatgg 7600

tatctctctg gatttcaagg aaacacactg gatactgcct actgacaaaa 7650

cctattcttc atattttgct aaaaatatgt ctaaaacttg tttaaatata 7700

aataatgtaa aaatataatc aactttattt gtcagcattt tgtacataag 7750

aaaattattt tcaggttgat gacatcacaa tttattttac tttatgcttt 7800

tgctttttgat ttttaatcac aattccaaac ttttgaatcc ataagatttt 7850

tcaatggata atttcctaaa ataaaagtta gataatgggt tttatggatt 7900

tctttgttat aatatatttt ctaccattcc aataggagat acattggtca 7950

aacactcaaa cctagatcat tttctaccaa ctatggttgc ctcaatataa 8000

ccttttattc atagatgttt tttttttattc aacttttgta gtatttacgt 8050

atgcagacta gtcttatttt tttaattcct gctgcactaa agctattaca 8100

aatataacat ggactttgtt ctttttagcc atgaacaaag tggcaaagtt 8150

gtgcaattac ctaacatgat ataaattttt gttttttgca caaaccaaaa 8200

gtttaatgtt aattcttttt acaaaactat ttactgtagt gtattgaaga 8250

actgcatgca gggaattgct attgctaaaa agaatggtga gctacgtcat 8300

tattgagcca aaagaataaa tttcattttt tattgcattt cacttattgg 8350

gctctggggt tttttgtttt tgtttttttgc tgttggcagt ttaaaatata 8400

tataattaat aaaacctgtg cttgatctga catttgtata cataaaagtt 8450

tacatgaatt ttacaacaaa ctagtgcatg attcaccaag cagtactaca 8500

gaacaaaggc aaattaaaag cagctttgtg aacttttatg tgtgcaaagg 8550

atcaagttca catgttccaa ctttcaggtt tgataataat agtagtaacc 8600

acctacaata gctttcaatt tcaattaact cccttggcta taagcatcta 8650

aactcatctt ctttcaatat aattgatgct atctcctaat tacttggtgg 8700

ctaataaatg ttacattctt tgttacttaa atgcattata taaactccta 8750
```

151

tgtatacata aggtattaat gatatagtta ttgagaattt atattaactt 8800

ttttttcaag aacccttgga tttatgtgag gtcaaaacca aactcttatt 8850

ctcagtggaa aactccagtt gtaatgcata tttttaaaga caatttggat 8900

ctaaatatgt atttcataat tctcccataa taaattatat aaggtggaaa 8950

aaaaaaaaaa aaaaaaaaaa aaaaaa 8976

<210> 80
<211> 1672
<212> DNA
<213> Homo sapien

<400> 80
aaaaaaatta aaaaaaaaaa aaaaaacaga aaaaaaaaca tagtacatgc 50

caagatatta ttatgacaat tacaaataca aataaattat gatctttgac 100

ctcagcatat ttattaacta aaagggaaga taaaacaggc acataactat 150

aacaggggca ccagtcatgg gcgccgcagc cgctcaggcg cctctcgggc 200

tgcctgcggc ctccgctcgc cttctgctgc tagcgacgtc ggtgcttctg 250

ctcttcgcct tctctctgcc cgggagccgc gcgtccaacc agcccccggg 300

tggtggcggc ggcacgggcg gggactgtcc cggcggcaaa ggcaagagca 350

tcaactgctc agaattaaat gtgagggagt ctgacgtaag agtttgtgat 400

gagtcatcat gtaaatatgg aggagtctgt aaagaagatg gagatggttt 450

gaaatgtgca tgccaatttc agtgccatac aaattatatt cctgtctgtg 500

gatcaaatgg ggacacttat caaaatgaat gctttctcag aagggctgct 550

tgtaagcacc agaaagagat aacagtaata gcaagaggac catgctactc 600

tgataatgga tctggatctg gagaaggaga agaggaaggg tcaggggcag 650

aagttcacag aaaacactcc aagtgtggac cctgcaaata taaagctgag 700

tgtgatgaag atgcagaaaa tgttgggtgt gtatgtaata tagattgcag 750

tggatacagt tttaatcctg tgtgtgcttc tgatgggagt tcctataaca 800

atccctgttt tgttcgagaa gcatcttgta taaagcaaga acaaattgat 850

ataaggcatc ttggtcattg cacagataca gatgacacta gtttgttggg 900

aaagaaagat gatggactac aatatcgacc agatgtgaaa gatgctagtg 950

atcaaagaga agatgtttat attggaaacc acatgccttg ccctgaaaac 1000

ctcaatggtt actgcatcca tggaaaatgt gaattcatct atctactcag 1050

```
aagggcttct tgtagatgtg aatctggcta cactggacag cactgtgaaa 1100

agacagactt tagtattctc tatgtagtgc caagtaggca aaagctcact 1150

catgttctta ttgcagcaat tattggagct gtacagattg ccatcatagt 1200

agcaattgta atgtgcataa caagaaaatg ccccaaaaac aatagaggac 1250

gtcgacagaa gcaaaaccta ggtcatttta cttcagatac gtcatccaga 1300

atggtttaaa ctgatgactt ttatatgtac actgaccatg tgtatgtaca 1350

tttattatgt cttttttttaa agaatggaaa tatttatttc agaaggcctt 1400

atttttggac attttatagt gtagtactgt tggctcgata tttgaatatt 1450

cagctacgac agttttggac tgtttagtag tctttgtttt atgtttttaa 1500

atacagaaat tgcttcacaa atttgtacca catggtaatt ctaagacttg 1550

ttctttaccc atggaatgta atatttttgc aaagatggac tacttcacaa 1600

atggttataa agtcatatcc acttcttcca caatgaccac agcaaatgac 1650

ccaagcatga actaaagaag ag 1672
```

<210> 81
<211> 2091
<212> DNA
<213> Homo sapien

<400> 81
```
cgccagcatg ctgccggagc agctctactt cctgcagagc cccccggagg 50

aggagcccga ataccacccc gacgcctcag cccaagaatt aaatgtgagg 100

gagtctgacg taagagtttg tgatgagtca tcatgtaaat atggaggagt 150

ctgtaaagaa gatggagatg gtttgaaatg tgcatgccaa tttcagtgcc 200

atacaaatta tattcctgtc tgtggatcaa atggggacac ttatcaaaat 250

gaatgctttc tcagaagggc tgcttgtaag caccagaaag agataacagt 300

aatagcaaga ggaccatgct actctgataa tggatctgga tctggagaag 350

gagaagagga agggtcaggg gcagaagttc acagaaaaca ctccaagtgt 400

ggaccctgca aatataaagc tgagtgtgat gaagatgcag aaaatgttgg 450

gtgtgtatgt aatatagatt gcagtggata cagtttttaat cctgtgtgtg 500

cttctgatgg gagttcctat aacaatccct gttttgttcg agaagcatct 550

tgtataaagc aagaacaaat tgatataagg catcttggtc attgcacaga 600

tacagatgac actagtttgt tgggaaagaa agatgatgga ctacaatatc 650
```

153
```

```
gaccagatgt gaaagatgct agtgatcaaa gagaagatgt ttatattgga 700

aaccacatgc cttgccctga aaacctcaat ggttactgca tccatggaaa 750

atgtgaattc atctattcta ctcagaaggc ttcttgtaga tgtgaatctg 800

gctacactgg acagcactgt gaaaagacag actttagtat tctctatgta 850

gtgccaagta ggcaaaagct cactcatgtt cttattgcag caattattgg 900

agctgtacag attgccatca tagtagcaat tgtaatgtgc ataacaagaa 950

aatgccccaa aaacaataga ggacgtcgac agaagcaaaa cctaggtcat 1000

tttacttcag atacgtcatc cagaatggtt taaactgatg acttttatat 1050

gtacactgac catgtgatgt acatttatta tgtctttttt taaagaatgg 1100

aaatatttat ttcagaggcc ttatttttgg acatttttag tgtagtactg 1150

ttggctcgta tttagaatat tcagctacga cagttttgga ctgtttagta 1200

gtctttgttt tatgttttta aatacagaaa ttgctttcac aaatttgtac 1250

cacatggtaa ttctaagact tgttctttac ccatggaatg taatattttt 1300

gcaaagatgg actacttcac aaatggttat aaagtcatat ccacttcttc 1350

cacaatgacc acagcaaatg accaagcatg aactaaaggt aaagatgttt 1400

acagattact tttcttacaa aaaaaatcta gaagacactg tgtttaaata 1450

gatatttaaa tgttttgag atttagtaac tgatttttta gacactgcct 1500

atcgcatgaa ctgtaaagct gtgtgtatta ggtgtaaaat atttataaga 1550

tatatggact ggggaatttg attattcctc cctttgaaaa aatagtccta 1600

ataatttgaa caaatatgtt agtaatgatg gaacagatca atgaaaagta 1650

gatatagata ttgtgaaaat aggctgttta acaaacagat tggaataaag 1700

cctattctac cagttaaact actttaatac acattcattt ttaaagaaaa 1750

tgtttgtttt aacataaata aacaaatcgt atcagtgttt gtgaataaaa 1800

tacaaaaatg attgttaatg attggtgctc ttaaagtgag cttaaaattt 1850

atccaagacg tatatccaaa tttgtcctgt agtaatagat taatattcat 1900

agattgttgg tgtttaaaga tctgaagtgt gagtagaatg tattcagctg 1950

tttaacatgt agtttagata ttcaaaagta tgcatgtaga atttaaagaa 2000

tatgttaaaa attattaatt ttaatatttt gtttggaaaa gcatgttata 2050

atataatgtt ttcactataa agaaaaaaaa aaaaaaaaa a 2091
```

154

<210> 82
<211> 554
<212> PRT
<213> Homo sapien

<400> 82
Met Pro Thr Val Asp Asp Ile Leu Glu Gln Val Gly Glu Ser Gly
1   5   10   15

Trp Phe Gln Lys Gln Ala Phe Leu Ile Leu Cys Leu Leu Ser Ala
                20   25   30

Ala Phe Ala Pro Ile Cys Val Gly Ile Val Phe Leu Gly Phe Thr
                35   40   45

Pro Asp His His Cys Gln Ser Pro Gly Val Ala Glu Leu Ser Gln
                50   55   60

Arg Cys Gly Trp Ser Pro Ala Glu Glu Leu Asn Tyr Thr Val Pro
                65   70   75

Gly Leu Gly Pro Ala Gly Glu Ala Phe Leu Gly Gln Cys Arg Arg
                80   85   90

Tyr Glu Val Asp Trp Asn Gln Ser Ala Leu Ser Cys Val Asp Pro
                95   100   105

Leu Ala Ser Leu Ala Thr Asn Arg Ser His Leu Pro Leu Gly Pro
                110   115   120

Cys Gln Asp Gly Trp Val Tyr Asp Thr Pro Gly Ser Ser Ile Val
                125   130   135

Thr Glu Phe Asn Leu Val Cys Ala Asp Ser Trp Lys Leu Asp Leu
                140   145   150

Phe Gln Ser Cys Leu Asn Ala Gly Phe Leu Phe Gly Ser Leu Gly
                155   160   165

Val Gly Tyr Phe Ala Asp Arg Phe Gly Arg Lys Leu Cys Leu Leu
                170   175   180

Gly Thr Val Leu Val Asn Ala Val Ser Gly Val Leu Met Ala Phe
                185   190   195

Ser Pro Asn Tyr Met Ser Met Leu Leu Phe Arg Leu Leu Gln Gly
                200   205   210

Leu Val Ser Lys Gly Asn Trp Met Ala Gly Tyr Thr Leu Ile Thr
                215   220   225

Glu Phe Val Gly Ser Gly Ser Arg Arg Thr Val Ala Ile Met Tyr
                230   235   240

Gln Met Ala Phe Thr Val Gly Leu Val Ala Leu Thr Gly Leu Ala
                245   250   255

Tyr Ala Leu Pro His Trp Arg Trp Leu Gln Leu Ala Val Ser Leu

155

Pro Thr Phe Leu Phe Leu Leu Tyr Tyr Trp Cys Val Pro Glu Ser
                    275   280   285

Pro Arg Trp Leu Leu Ser Gln Lys Arg Asn Thr Glu Ala Ile Lys
                    290   295   300

Ile Met Asp His Ile Ala Gln Lys Asn Gly Lys Leu Pro Pro Ala
                    305   310   315

Asp Leu Lys Met Leu Ser Leu Glu Glu Asp Val Thr Glu Lys Leu
                    320   325   330

Ser Pro Ser Phe Ala Asp Leu Phe Arg Thr Pro Arg Leu Arg Lys
                    335   340   345

Arg Thr Phe Ile Leu Met Tyr Leu Trp Phe Thr Asp Ser Val Leu
                    350   355   360

Tyr Gln Gly Leu Ile Leu His Met Gly Ala Thr Ser Gly Asn Leu
                    365   370   375

Tyr Leu Asp Phe Leu Tyr Ser Ala Leu Val Glu Ile Pro Gly Ala
                    380   385   390

Phe Ile Ala Leu Ile Thr Ile Asp Arg Val Gly Arg Ile Tyr Pro
                    395   400   405

Met Ala Met Ser Asn Leu Leu Ala Gly Ala Ala Cys Leu Val Met
                    410   415   420

Ile Phe Ile Ser Pro Asp Leu His Trp Leu Asn Ile Ile Ile Met
                    425   430   435

Cys Val Gly Arg Met Gly Ile Thr Ile Ala Ile Gln Met Ile Cys
                    440   445   450

Leu Val Asn Ala Glu Leu Tyr Pro Thr Phe Val Arg Asn Leu Gly
                    455   460   465

Val Met Val Cys Ser Ser Leu Cys Asp Ile Gly Gly Ile Ile Thr
                    470   475   480

Pro Phe Ile Val Phe Arg Leu Arg Glu Val Trp Gln Ala Leu Pro
                    485   490   495

Leu Ile Leu Phe Ala Val Leu Gly Leu Leu Ala Ala Gly Val Thr
                    500   505   510

Leu Leu Leu Pro Glu Thr Lys Gly Val Ala Leu Pro Glu Thr Met
                    515   520   525

Lys Asp Ala Glu Asn Leu Gly Arg Lys Ala Lys Pro Lys Glu Asn
                    530   535   540

Thr Ile Tyr Leu Lys Val Gln Thr Ser Glu Pro Ser Gly Thr
                    545   550

156

<210> 83
<211> 527
<212> PRT
<213> Homo sapien

<400> 83

Met	Arg	Ser	Asp	Lys	Ser	Ala	Leu	Val	Phe	Leu	Leu	Leu	Gln	Leu
1				5					10					15

Phe	Cys	Val	Gly	Cys	Gly	Phe	Cys	Gly	Lys	Val	Leu	Val	Trp	Pro
			20					25					30	

Cys	Asp	Met	Ser	His	Trp	Leu	Asn	Val	Lys	Val	Ile	Leu	Glu	Glu
			35					40					45	

Leu	Ile	Val	Arg	Gly	His	Glu	Val	Thr	Val	Leu	Thr	His	Ser	Lys
			50					55					60	

Pro	Ser	Leu	Ile	Asp	Tyr	Arg	Lys	Pro	Ser	Ala	Leu	Lys	Phe	Glu
			65					70					75	

Val	Val	His	Met	Pro	Gln	Asp	Arg	Thr	Glu	Glu	Asn	Glu	Ile	Phe
			80					85					90	

Val	Asp	Leu	Ala	Leu	Asn	Val	Leu	Pro	Gly	Leu	Ser	Thr	Trp	Gln
			95					100					105	

Ser	Val	Ile	Lys	Leu	Asn	Asp	Phe	Phe	Val	Glu	Ile	Arg	Gly	Thr
			110					115					120	

Leu	Lys	Met	Met	Cys	Glu	Ser	Phe	Ile	Tyr	Asn	Gln	Thr	Leu	Met
			125					130					135	

Lys	Lys	Leu	Gln	Glu	Thr	Asn	Tyr	Asp	Val	Met	Leu	Ile	Asp	Pro
			140					145					150	

Val	Ile	Pro	Cys	Gly	Asp	Leu	Met	Ala	Glu	Leu	Leu	Ala	Val	Pro
			155					160					165	

Phe	Val	Leu	Thr	Leu	Arg	Ile	Ser	Val	Gly	Gly	Asn	Met	Glu	Arg
			170					175					180	

Ser	Cys	Gly	Lys	Leu	Pro	Ala	Pro	Leu	Ser	Tyr	Val	Pro	Val	Pro
			185					190					195	

Met	Thr	Gly	Leu	Thr	Asp	Arg	Met	Thr	Phe	Leu	Glu	Arg	Val	Lys
			200					205					210	

Asn	Ser	Met	Leu	Ser	Val	Leu	Phe	His	Phe	Trp	Ile	Gln	Asp	Tyr
			215					220					225	

Asp	Tyr	His	Phe	Trp	Glu	Glu	Phe	Tyr	Ser	Lys	Ala	Leu	Gly	Arg
			230					235					240	

Pro	Thr	Thr	Leu	Cys	Glu	Thr	Val	Gly	Lys	Ala	Glu	Ile	Trp	Leu
			245					250					255	

Ile	Arg	Thr	Tyr	Trp	Asp	Phe	Glu	Phe	Pro	Gln	Pro	Tyr	Gln	Pro

```
                 260                      265                   270

Asn Phe Glu Phe Val Gly Gly Leu His Cys Lys Pro Ala Lys Ala
                 275                      280                   285

Leu Pro Lys Glu Met Glu Asn Phe Val Gln Ser Ser Gly Glu Asp
                 290                      295                   300

Gly Ile Val Val Phe Ser Leu Gly Ser Leu Phe Gln Asn Val Thr
                 305                      310                   315

Glu Glu Lys Ala Asn Ile Ile Ala Ser Ala Leu Ala Gln Ile Pro
                 320                      325                   330

Gln Lys Val Leu Trp Arg Tyr Lys Gly Lys Lys Pro Ser Thr Leu
                 335                      340                   345

Gly Ala Asn Thr Arg Leu Tyr Asp Trp Ile Pro Gln Asn Asp Leu
                 350                      355                   360

Leu Gly His Pro Lys Thr Lys Ala Phe Ile Thr His Gly Gly Met
                 365                      370                   375

Asn Gly Ile Tyr Glu Ala Ile Tyr His Gly Val Pro Met Val Gly
                 380                      385                   390

Val Pro Ile Phe Gly Asp Gln Leu Asp Asn Ile Ala His Met Lys
                 395                      400                   405

Ala Lys Gly Ala Ala Val Glu Ile Asn Phe Lys Thr Met Thr Ser
                 410                      415                   420

Glu Asp Leu Leu Arg Ala Leu Arg Thr Val Ile Thr Asp Ser Ser
                 425                      430                   435

Tyr Lys Glu Asn Ala Met Arg Leu Ser Arg Ile His His Asp Gln
                 440                      445                   450

Pro Val Lys Pro Leu Asp Arg Ala Val Phe Trp Ile Glu Phe Val
                 455                      460                   465

Met Arg His Lys Gly Ala Lys His Leu Arg Ser Ala Ala His Asp
                 470                      475                   480

Leu Thr Trp Phe Gln His Tyr Ser Ile Asp Val Ile Gly Phe Leu
                 485                      490                   495

Leu Thr Cys Val Ala Thr Ala Ile Phe Leu Phe Thr Lys Cys Phe
                 500                      505                   510

Leu Phe Ser Cys Gln Lys Phe Asn Lys Thr Arg Lys Ile Glu Lys
                 515                      520                   525

Arg Glu
```

<210> 84
<211> 469

158

<212> PRT
<213> Homo sapien

<400> 84
```
Met Gln Ala Asp Ala Arg Ala Phe Phe Ala Gln Asp Gly Val Gln
 1               5                  10                  15

Ser Leu Leu Thr Gln Lys Trp Trp Gly Asp Met Ala Ser Thr Thr
                20                  25                  30

Pro Ile Trp Ala Leu Val Leu Ala Phe Phe Cys Pro Pro Leu Ile
                35                  40                  45

Tyr Thr Arg Leu Ile Thr Phe Arg Lys Ser Glu Glu Glu Pro Thr
                50                  55                  60

Arg Glu Glu Leu Glu Phe Asp Met Asp Ser Val Ile Asn Gly Glu
                65                  70                  75

Gly Pro Val Gly Thr Ala Asp Pro Ala Glu Lys Thr Pro Leu Gly
                80                  85                  90

Val Pro Arg Gln Ser Gly Arg Pro Gly Cys Cys Gly Gly Arg Cys
                95                  100                 105

Gly Gly Arg Arg Cys Leu Arg Arg Trp Phe His Phe Trp Gly Ala
                110                 115                 120

Pro Val Thr Ile Phe Met Gly Asn Val Val Ser Tyr Leu Leu Phe
                125                 130                 135

Leu Leu Leu Phe Ser Arg Val Leu Leu Val Asp Phe Gln Pro Ala
                140                 145                 150

Pro Pro Gly Ser Leu Glu Leu Leu Leu Tyr Phe Trp Ala Phe Thr
                155                 160                 165

Leu Leu Cys Glu Glu Leu Arg Gln Gly Leu Ser Gly Gly Gly Gly
                170                 175                 180

Ser Leu Ala Ser Gly Gly Pro Gly Pro Gly His Ala Ser Leu Ser
                185                 190                 195

Gln Arg Leu Arg Leu Tyr Leu Ala Asp Ser Trp Asn Gln Cys Asp
                200                 205                 210

Leu Val Ala Leu Thr Cys Phe Leu Leu Gly Val Gly Cys Arg Leu
                215                 220                 225

Thr Pro Gly Leu Tyr His Leu Gly Arg Thr Val Leu Cys Ile Asp
                230                 235                 240

Phe Met Val Phe Thr Val Arg Leu Leu His Ile Phe Thr Val Asn
                245                 250                 255

Lys Gln Leu Gly Pro Lys Ile Val Ile Val Ser Lys Met Met Lys
                260                 265                 270
```

159

Asp Val Phe Phe Phe Leu Phe Phe Leu Gly Val Trp Leu Val Ala
                    275   280   285

Tyr Gly Val Ala Thr Glu Gly Leu Leu Arg Pro Arg Asp Ser Asp
                    290   295   .   300

Phe Pro Ser Ile Leu Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln
                    305   310   315

Ile Phe Gly Gln Ile Pro Gln Glu Asp Met Asp Val Ala Leu Met
                    320   . .   325   330

Glu His Ser Asn Cys Ser Ser Glu Pro Gly Phe Trp Ala His Pro
                    335   340   345

Pro Gly Ala Gln Ala Gly Thr Cys Val Ser Gln Tyr Ala Asn Trp
                    350   355   360

Leu Val Val Leu Leu Leu Val Ile Phe Leu Leu Val Ala Asn Ile
                    365   370   375

Leu Leu Val Asn Leu Leu Ile Ala Met Phe Ser Tyr Thr Phe Gly
                    380   385   390

Lys Val Gln Gly Asn Ser Asp Leu Tyr Trp Lys Ala Gln Val Thr
                    395   400   405

Ala Ser Ser Gly Asn Ser Thr Leu Gly Pro Arg Trp Pro Arg Pro
                    410   415   420

Leu Ser Ser Ser Pro Thr Cys Ala Ser Cys Ser Gly Asn Cys Ala
                    425   430   435

Gly Asp Pro Gly Ala Pro Ser Arg Pro Pro Arg Pro Ser Ser Ile
                    440   445   450

Ser Gly Phe Thr Phe Leu Arg Lys Pro Ser Gly Ser Ala Asn Val
                    455   460   465

Gly Ile Gly Ala

<210> 85
<211> 320
<212> PRT
<213> Homo sapien

<400> 85
Met Thr Leu Trp Asn Gly Val Leu Pro Phe Tyr Pro Gln Pro Arg
  1   5   10   15

His Ala Ala Gly Phe Ser Val Pro Leu Leu Ile Val Ile Leu Val
                    20   25   30

Phe Leu Ala Leu Ala Ala Ser Phe Leu Leu Ile Leu Pro Gly Ile
                    35   40   45

Arg Gly His Ser Arg Trp Phe Trp Leu Val Arg Val Leu Leu Ser

160

Leu Phe Ile Gly Ala Glu Ile Val Ala Val His Phe Ser Ala Glu
                65   70   75

Trp Phe Val Gly Thr Val Asn Thr Asn Thr Ser Tyr Lys Ala Phe
                80   85   90

Ser Ala Ala Arg Val Thr Ala Arg Val Gly Leu Leu Val Gly Leu
                95   100   105

Glu Gly Ile Asn Ile Thr Leu Thr Gly Thr Pro Val His Gln Leu
                110   115   120

Asn Glu Thr Ile Asp Tyr Asn Glu Gln Phe Thr Trp Arg Leu Lys
                125   130   135

Glu Asn Tyr Ala Ala Glu Tyr Ala Asn Ala Leu Glu Lys Gly Leu
                140   145   150

Pro Asp Pro Val Leu Tyr Leu Ala Glu Lys Phe Thr Pro Ser Ser
                155   160   165

Pro Cys Gly Leu Tyr His Gln Tyr His Leu Ala Gly His Tyr Ala
                170   175   180

Ser Ala Thr Leu Trp Val Ala Phe Cys Phe Trp Leu Leu Ser Asn
                185   190   195

Val Leu Leu Ser Thr Pro Ala Pro Leu Tyr Gly Gly Leu Ala Leu
                200   205   210

Leu Thr Thr Gly Ala Phe Ala Leu Phe Gly Val Phe Ala Leu Ala
                215   220   225

Ser Ile Ser Ser Val Pro Leu Cys Pro Leu Arg Leu Gly Ser Ser
                230   235   240

Ala Leu Thr Thr Gln Tyr Gly Ala Ala Phe Trp Val Thr Leu Ala
                245   250   255

Thr Gly Val Leu Cys Leu Phe Leu Gly Gly Ala Val Val Ser Leu
                260   265   270

Gln Tyr Val Arg Pro Ser Ala Leu Arg Thr Leu Leu Asp Gln Ser
                275   280   285

Ala Lys Asp Cys Ser Gln Glu Arg Gly Gly Ser Pro Leu Ile Leu
                290   295   300

Gly Asp Pro Leu His Lys Gln Ala Ala Leu Pro Asp Leu Lys Cys
                305   310   315

Ile Thr Thr Asn Leu
                320

<210> 86
<211> -1

<212> PRT
<213> Homo sapien

<400> 86
Met Glu Arg Leu Trp Gly Leu Phe Gln Arg Ala Gln Gln Leu Ser

Pro Arg Ser Ser Gln Thr Val Tyr Gln Arg Val Glu Gly Pro Arg

Lys Gly His Leu Glu Glu Glu Glu Glu Asp Gly Glu Glu Gly Ala

Glu Thr Leu Ala His Phe Cys Pro Met Glu Leu Arg Gly Pro Glu

Pro Leu Gly Ser Arg Pro Arg Gln Pro Asn Leu Ile Pro Trp Ala

Ala Ala Gly Arg Arg Ala Ala Pro Tyr Leu Val Leu Thr Ala Leu

Leu Ile Phe Thr Gly Ala Phe Leu Leu Gly Tyr Val Ala Phe Arg

Gly Ser Cys Gln Ala Cys Gly Asp Ser Val Leu Val Val Ser Glu

Asp Val Asn Tyr Glu Pro Asp Leu Asp Phe His Gln Gly Arg Leu

Tyr Trp Ser Asp Leu Gln Ala Met Phe Leu Gln Phe Leu Gly Glu

Gly Arg Leu Glu Asp Thr Ile Arg Gln Thr Ser Leu Arg Glu Arg

Val Ala Gly Ser Ala Gly Met Ala Ala Leu Thr Gln Asp Ile Arg

Ala Ala Leu Ser Arg Gln Lys Leu Asp His Val Trp Thr Asp Thr

His Tyr Val Gly Leu Gln Phe Pro Asp Pro Ala His Pro Asn Thr

Leu His Trp Val Asp Glu Ala Gly Lys Val Gly Glu Gln Leu Pro

Leu Glu Asp Pro Asp Val Tyr Cys Pro Tyr Ser Ala Ile Gly Asn

Val Thr Gly Glu Leu Val Tyr Ala His Tyr Gly Arg Pro Glu Asp

Leu Gln Asp Leu Arg Ala Arg Gly Val Asp Pro Val Gly Arg Leu

162

Leu Leu Val Arg Val Gly Val Ile Ser Phe Ala Gln Lys Val Thr

Asn Ala Gln Asp Phe Gly Ala Gln Gly Val Leu Ile Tyr Pro Glu

Pro Ala Asp Phe Ser Gln Asp Pro Pro Lys Pro Ser Leu Ser Ser

Gln Gln Ala Val Tyr Gly His Val His Leu Gly Thr Gly Asp Pro

Tyr Thr Pro Gly Phe Pro Ser Phe Asn Gln Thr Gln Phe Pro Pro

Val Ala Ser Ser Gly Leu Pro Ser Ile Pro Ala Gln Pro Ile Ser

Ala Asp Ile Ala Ser Arg Leu Leu Arg Lys Leu Lys Gly Pro Val

Ala Pro Gln Glu Trp Gln Gly Ser Leu Leu Gly Ser Pro Tyr His

Leu Gly Pro Gly Pro Arg Leu Arg Leu Val Val Asn Asn His Arg

Thr Ser Thr Pro Ile Asn Asn Ile Phe Gly Cys Ile Glu Gly Arg

Ser Glu Pro Asp His Tyr Val Val Ile Gly Ala Gln Arg Asp Ala

Trp Gly Pro Gly Ala Ala Lys Ser Ala Val Gly Thr Ala Ile Leu

Leu Glu Leu Val Arg Thr Phe Ser Ser Met Val Ser Asn Gly Phe

Arg Pro Arg Arg Ser Leu Leu Phe Ile Ser Trp Asp Gly Gly Asp

Phe Gly Ser Val Gly Ser Thr Glu Trp Leu Glu Gly Tyr Leu Ser

Val Leu His Leu Lys Ala Val Val Tyr Val Ser Leu Asp Asn Ala

Val Leu Gly Asp Asp Lys Phe His Ala Lys Thr Ser Pro Leu Leu

Thr Ser Leu Ile Glu Ser Val Leu Lys Gln Val Asp Ser Pro Asn

His Ser Gly Gln Thr Leu Tyr Glu Gln Val Val Phe Thr Asn Pro

Ser Trp Asp Ala Glu Val Ile Arg Pro Leu Pro Met Asp Ser Ser

163

Ala Tyr Ser Phe Thr Ala Phe Val Gly Val Pro Ala Val Glu Phe

Ser Phe Met Glu Asp Asp Gln Ala Tyr Pro Phe Leu His Thr Lys

Glu Asp Thr Tyr Glu Asn Leu His Lys Val Leu Gln Gly Arg Leu

Pro Ala Val Ala Gln Ala Val Ala Gln Leu Ala Gly Gln Leu Leu

Ile Arg Leu Ser His Asp Arg Leu Leu Pro Leu Asp Phe Gly Arg

Tyr Gly Asp Val Val Leu Arg His Ile Gly Asn Leu Asn Glu Phe

Ser Gly Asp Leu Lys Ala Arg Gly Leu Thr Leu Gln Trp Val Tyr

Ser Ala Arg Gly Asp Tyr Ile Arg Ala Ala Glu Lys Leu Arg Gln

Glu Ile Tyr Ser Ser Glu Glu Arg Asp Glu Arg Leu Thr Arg Met

Tyr Asn Val Arg Ile Met Arg Val Glu Phe Tyr Phe Leu Ser Gln

Tyr Val Ser Pro Ala Asp Ser Pro Phe Arg His Ile Phe Met Gly

Arg Gly Asp His Thr Leu Gly Ala Leu Leu Asp His Leu Arg Leu

Leu Arg Ser Asn Ser Ser Gly Thr Pro Gly Ala Thr Ser Ser Thr

Gly Phe Gln Glu Ser Arg Phe Arg Arg Gln Leu Ala Leu Leu Thr

Trp Thr Leu Gln Gly Ala Ala Asn Ala Leu Ser Gly Asp Val Trp

Asn Ile Asp Asn Asn Phe

<210> 87
<211> 318
<212> PRT
<213> Homo sapien

<400> 87
Met Val Glu Leu Met Phe Pro Leu Leu Leu Leu Leu Leu Pro Phe
1   5   10   15

164

```
Leu Leu Tyr Met Ala Ala Pro Gln Ile Arg Lys Met Leu Ser Ser
              20              25              30

Gly Val Cys Thr Ser Thr Val Gln Leu Pro Gly Lys Val Val Val
              35              40              45

Val Thr Gly Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala Lys Glu
              50              55              60

Leu Ala Gln Arg Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp Val
              65              70              75

Glu Lys Gly Glu Leu Val Ala Lys Glu Ile Gln Thr Thr Thr Gly
              80              85              90

Asn Gln Gln Val Leu Val Arg Lys Leu Asp Leu Ser Asp Thr Lys
              95              100             105

Ser Ile Arg Ala Phe Ala Lys Gly Phe Leu Ala Glu Glu Lys His
              110             115             120

Leu His Val Leu Ile Asn Asn Ala Gly Val Met Met Cys Pro Tyr
              125             130             135

Ser Lys Thr Ala Asp Gly Phe Glu Met His Ile Gly Val Asn His
              140             145             150

Leu Gly His Phe Leu Leu Thr His Leu Leu Leu Glu Lys Leu Lys
              155             160             165

Glu Ser Ala Pro Ser Arg Ile Val Asn Val Ser Ser Leu Ala His
              170             175             180

His Leu Gly Arg Ile His Phe His Asn Leu Gln Gly Glu Lys Phe
              185             190             195

Tyr Asn Ala Gly Leu Ala Tyr Cys His Ser Lys Leu Ala Asn Ile
              200             205             210

Leu Phe Thr Gln Glu Leu Ala Arg Arg Leu Lys Gly Ser Gly Val
              215             220             225

Thr Thr Tyr Ser Val His Pro Gly Thr Val Gln Ser Glu Leu Val
              230             235             240

Arg His Ser Ser Phe Met Arg Trp Met Trp Trp Leu Phe Ser Phe
              245             250             255

Phe Ile Lys Thr Pro Gln Gln Gly Ala Gln Thr Ser Leu His Cys
              260             265             270

Ala Leu Thr Glu Gly Leu Glu Ile Leu Ser Gly Asn His Phe Ser
              275             280             285

Asp Cys His Val Ala Trp Val Ser Ala Gln Ala Arg Asn Glu Thr
              290             295             300

Ile Ala Arg Arg Leu Trp Asp Val Ser Cys Asp Leu Leu Gly Leu
```

165

Pro Ile Asp

<210> 88
<211> 131
<212> PRT
<213> Homo sapien

<400> 88
```
Met Lys Ile Phe Leu Pro Val Leu Leu Ala Ala Leu Leu Gly Val
  1               5                   10                  15

Glu Arg Ala Ser Ser Leu Met Cys Phe Ser Cys Leu Asn Gln Lys
                 20                  25                  30

Ser Asn Leu Tyr Cys Leu Lys Pro Thr Ile Cys Ser Asp Gln Asp
                 35                  40                  45

Asn Tyr Cys Val Thr Val Ser Ala Ser Ala Gly Ile Gly Asn Leu
                 50                  55                  60

Val Thr Phe Gly His Ser Leu Ser Lys Thr Cys Ser Pro Ala Cys
                 65                  70                  75

Pro Ile Pro Glu Gly Val Asn Val Gly Val Ala Ser Met Gly Ile
                 80                  85                  90

Ser Cys Cys Gln Ser Phe Leu Cys Asn Phe Ser Ala Ala Asp Gly
                 95                  100                 105

Gly Leu Arg Ala Ser Val Thr Leu Leu Gly Ala Gly Leu Leu Leu
                 110                 115                 120

Ser Leu Leu Pro Ala Leu Leu Arg Phe Gly Pro
                 125                 130
```

<210> 89
<211> 343
<212> PRT
<213> Homo sapien

<220>
<221> Unsure
<222> 233, 328, 333
<223> Unknown amino acid

<400> 89
```
Met Leu Leu Leu Lys Lys His Thr Glu Asp Ile Ser Ser Val Tyr
  1               5                   10                  15

Glu Ile Arg Glu Arg Leu Gly Ser Gly Ala Phe Ser Glu Val Val
                 20                  25                  30

Leu Ala Gln Glu Arg Gly Ser Ala His Leu Val Ala Leu Lys Cys
                 35                  40                  45
```

```
Ile Pro Lys Lys Ala Leu Arg Gly Lys Glu Ala Leu Val Glu Asn
            50                    55                    60

Glu Ile Ala Val Leu Arg Arg Ile Ser His Pro Asn Ile Val Ala
            65                    70                    75

Leu Glu Asp Val His Glu Ser Pro Ser His Leu Tyr Leu Ala Met
            80                    85                    90

Glu Leu Val Thr Gly Gly Glu Leu Phe Asp Arg Ile Met Glu Arg
            95                    100                   105

Gly Ser Tyr Thr Glu Lys Asp Ala Ser His Leu Val Gly Gln Val
            110                   115                   120

Leu Gly Ala Val Ser Tyr Leu His Ser Leu Gly Ile Val His Arg
            125                   130                   135

Asp Leu Lys Pro Glu Asn Leu Leu Tyr Ala Thr Pro Phe Glu Asp
            140                   145                   150

Ser Lys Ile Met Val Ser Asp Phe Gly Leu Ser Lys Ile Gln Ala
            155                   160                   165

Gly Asn Met Leu Gly Thr Ala Cys Gly Thr Pro Gly Tyr Val Ala
            170                   175                   180

Pro Glu Leu Leu Glu Gln Lys Pro Tyr Gly Lys Ala Val Asp Val
            185                   190                   195

Trp Ala Leu Gly Val Ile Ser Tyr Ile Leu Leu Cys Gly Tyr Pro
            200                   205                   210

Pro Phe Tyr Asp Glu Ser Asp Pro Glu Leu Phe Ser Gln Ile Leu
            215                   220                   225

Arg Ala Ser Tyr Glu Phe Asp Xaa Pro Phe Trp Asp Asp Ile Ser
            230                   235                   240

Glu Ser Gly Lys Asp Phe Ile Arg His Leu Leu Glu Arg Asp Leu
            245                   250                   255

Gln Lys Arg Phe Thr Cys Gln Gln Ala Leu Arg Asp Leu Trp Ile
            260                   265                   270

Phe Trp Asp Thr Gly Phe Gly Arg Asp Ile Leu Gly Phe Val Ser
            275                   280                   285

Glu Gln Ile Arg Lys Asn Phe Ala Trp Thr His Trp Lys Arg Ala
            290                   295                   300

Phe Asn Ala Thr Leu Phe Leu Arg His Ile Arg Lys Leu Gly Gln
            305                   310                   315

Ile Pro Glu Gly Glu Gly Ala Ser Glu Gln Gly Met Xaa Arg His
            320                   325                   330

Ser His Xaa Gly Leu Arg Ala Gly Gln Pro Pro Lys Trp
```

335   340

<210> 90
<211> 911
<212> PRT
<213> Homo sapien

<400> 90
Met Glu Glu Leu Gln Asp Asp Tyr Glu Asp Met Met Glu Glu Asn
 1   5   10   15

Leu Glu Gln Glu Glu Tyr Glu Asp Pro Asp Ile Pro Glu Ser Gln
                20   25   30

Met Glu Glu Pro Ala Ala His Asp Thr Glu Ala Thr Ala Thr Asp
                35   40   45

Tyr His Thr Thr Ser His Pro Gly Thr His Glu Val Tyr Val Glu
                50   55   60

Leu Gln Glu Leu Val Met Asp Glu Lys Asn Gln Glu Leu Arg Trp
                65   70   75

Met Glu Ala Ala Arg Trp Val Gln Leu Glu Glu Asn Leu Gly Glu
                80   85   90

Asn Gly Ala Trp Gly Arg Pro His Leu Ser His Leu Thr Phe Trp
                95   100   105

Ser Leu Leu Glu Leu Arg Arg Val Phe Thr Lys Gly Thr Val Leu
                110   115   120

Leu Asp Leu Gln Glu Thr Ser Leu Ala Gly Val Ala Asn Gln Leu
                125   130   135

Leu Asp Arg Phe Ile Phe Glu Asp Gln Ile Arg Pro Gln Asp Arg
                140   145   150

Glu Glu Leu Leu Arg Ala Leu Leu Leu Lys His Ser His Ala Gly
                155   160   165

Glu Leu Glu Ala Leu Gly Gly Val Lys Pro Ala Val Leu Thr Arg
                170   175   180

Ser Gly Asp Pro Ser Gln Pro Leu Leu Pro Gln His Ser Ser Leu
                185   190   195

Glu Thr Gln Leu Phe Cys Glu Gln Gly Asp Gly Gly Thr Glu Gly
                200   205   210

His Ser Pro Ser Gly Ile Leu Glu Lys Ile Pro Pro Asp Ser Glu
                215   220   225

Ala Thr Leu Val Leu Val Gly Arg Ala Asp Phe Leu Glu Gln Pro
                230   235   240

Val Leu Gly Phe Val Arg Leu Gln Glu Ala Ala Glu Leu Glu Ala
                245   250   255

168

```
Val Glu Leu Pro Val Pro Ile Arg Phe Leu Phe Val Leu Leu Gly
                260             265                 270

Pro Glu Ala Pro His Ile Asp Tyr Thr Gln Leu Gly Arg Ala Ala
                275             280                 285

Ala Thr Leu Met Ser Glu Arg Val Phe Arg Ile Asp Ala Tyr Met
                290             295                 300

Ala Gln Ser Arg Gly Glu Leu Leu His Ser Leu Glu Gly Phe Leu
                305             310                 315

Asp Cys Ser Leu Val Leu Pro Pro Thr Asp Ala Pro Ser Glu Gln
                320             325                 330

Ala Leu Leu Ser Leu Val Pro Val Gln Arg Glu Leu Leu Arg Arg
                335             340                 345

Arg Tyr Gln Ser Ser Pro Ala Lys Pro Asp Ser Ser Phe Tyr Lys
                350             355                 360

Gly Leu Asp Leu Asn Gly Gly Pro Asp Asp Pro Leu Gln Gln Thr
                365             370                 375

Gly Gln Leu Phe Gly Gly Leu Val Arg Asp Ile Arg Arg Arg Tyr
                380             385                 390

Pro Tyr Tyr Leu Ser Asp Ile Thr Asp Ala Phe Ser Pro Gln Val
                395             400                 405

Leu Ala Ala Val Ile Phe Ile Tyr Phe Ala Ala Leu Ser Pro Ala
                410             415                 420

Ile Thr Phe Gly Gly Leu Leu Gly Glu Lys Thr Arg Asn Gln Met
                425             430                 435

Gly Val Ser Glu Leu Leu Ile Ser Thr Ala Val Gln Gly Ile Leu
                440             445                 450

Phe Ala Leu Leu Gly Ala Gln Pro Leu Leu Val Val Gly Phe Ser
                455             460                 465

Gly Pro Leu Leu Val Phe Glu Glu Ala Phe Phe Ser Phe Cys Glu
                470             475                 480

Thr Asn Gly Leu Glu Tyr Ile Val Gly Arg Val Trp Ile Gly Phe
                485             490                 495

Trp Leu Ile Leu Leu Val Val Leu Val Val Ala Phe Glu Gly Ser
                500             505                 510

Phe Leu Val Arg Phe Ile Ser Arg Tyr Thr Gln Glu Ile Phe Ser
                515             520                 525

Phe Leu Ile Ser Leu Ile Phe Ile Tyr Glu Thr Phe Ser Lys Leu
                530             535                 540

Ile Lys Ile Phe Gln Asp His Pro Leu Gln Lys Thr Tyr Asn Tyr
```

169

Asn Val Leu Met Val Pro Lys Pro Gln Gly Pro Leu Pro Asn Thr
560 565 570

Ala Leu Leu Ser Leu Val Leu Met Ala Gly Thr Phe Phe Phe Ala
575 580 585

Met Met Leu Arg Lys Phe Lys Asn Ser Ser Tyr Phe Pro Gly Lys
590 595 600

Leu Arg Arg Val Ile Gly Asp Phe Gly Val Pro Ile Ser Ile Leu
605 610 615

Ile Met Val Leu Val Asp Phe Phe Ile Gln Asp Thr Tyr Thr Gln
620 625 630

Lys Leu Ser Val Pro Asp Gly Phe Lys Val Ser Asn Ser Ser Ala
635 640 645

Arg Gly Trp Val Ile His Pro Leu Gly Leu Arg Ser Glu Phe Pro
650 655 660

Ile Trp Met Met Phe Ala Ser Ala Leu Pro Ala Leu Leu Val Phe
665 670 675

Ile Leu Ile Phe Leu Glu Ser Gln Ile Thr Thr Leu Ile Val Ser
680 685 690

Lys Pro Glu Arg Lys Met Val Lys Gly Ser Gly Phe His Leu Asp
695 700 705

Leu Leu Leu Val Val Gly Met Gly Gly Val Ala Ala Leu Phe Gly
710 715 720

Met Pro Trp Leu Ser Ala Thr Thr Val Arg Ser Val Thr His Ala
725 730 735

Asn Ala Leu Thr Val Met Gly Lys Ala Ser Thr Pro Gly Ala Ala
740 745 750

Ala Gln Ile Gln Glu Val Lys Glu Gln Arg Ile Ser Gly Leu Leu
755 760 765

Val Ala Val Leu Val Gly Leu Ser Ile Leu Met Glu Pro Ile Leu
770 775 780

Ser Arg Ile Pro Leu Ala Val Leu Phe Gly Ile Phe Leu Tyr Met
785 790 795

Gly Val Thr Ser Leu Ser Gly Ile Gln Leu Phe Asp Arg Ile Leu
800 805 810

Leu Leu Phe Lys Pro Pro Lys Tyr His Pro Asp Val Pro Tyr Val
815 820 825

Lys Arg Val Lys Thr Trp Arg Met His Leu Phe Thr Gly Ile Gln
830 835 840

170

```
Ile Ile Cys Leu Ala Val Leu Trp Val Val Lys Ser Thr Pro Ala
            845                 850                 855

Ser Leu Ala Leu Pro Phe Val Leu Ile Leu Thr Val Pro Leu Arg
            860                 865                 870

Arg Val Leu Leu Pro Leu Ile Phe Arg Asn Val Glu Leu Gln Cys
            875                 880                 885

Leu Asp Ala Asp Asp Ala Lys Ala Thr Phe Asp Glu Glu Glu Gly
            890                 895                 900

Arg Asp Glu Tyr Asp Glu Val Ala Met Pro Val
            905                 910
```

<210> 91
<211> 387
<212> PRT
<213> Homo sapien

<400> 91
```
Met Val Ala Trp Val Val Ser Thr Gly Val Ala Ile Ala Cys Cys
  1               5                  10                 15

Ala Ala Val Tyr Tyr Leu Ala Glu Tyr Asn Leu Glu Phe Leu Lys
            20                  25                  30

Thr His Ser Asn Pro Gly Ala Val Leu Leu Leu Pro Phe Val Val
            35                  40                  45

Ser Cys Ile Asn Leu Ala Val Pro Cys Ile Tyr Ser Met Phe Arg
            50                  55                  60

Leu Val Glu Arg Tyr Glu Met Pro Arg His Glu Val Tyr Val Leu
            65                  70                  75

Leu Ile Arg Asn Ile Phe Leu Lys Ile Ser Ile Ile Gly Ile Leu
            80                  85                  90

Cys Tyr Tyr Trp Leu Asn Thr Val Ala Leu Ser Gly Glu Glu Cys
            95                  100                 105

Trp Glu Thr Leu Ile Gly Gln Asp Ile Tyr Arg Leu Leu Leu Met
            110                 115                 120

Asp Phe Val Phe Ser Leu Val Asn Ser Phe Leu Gly Glu Phe Leu
            125                 130                 135

Arg Arg Ile Ile Gly Met Gln Leu Ile Thr Ser Leu Gly Leu Gln
            140                 145                 150

Glu Phe Asp Ile Ala Arg Asn Val Leu Glu Leu Ile Tyr Ala Gln
            155                 160                 165

Thr Leu Val Trp Ile Gly Ile Phe Phe Cys Pro Leu Leu Pro Phe
            170                 175                 180

Ile Gln Met Ile Met Leu Phe Ile Met Phe Tyr Ser Lys Asn Ile
```

Ser Leu Met Met Asn Phe Gln Pro Pro Ser Lys Ala Trp Arg Ala
            200   205   210

Ser Gln Met Met Thr Phe Phe Ile Phe Leu Leu Phe Phe Pro Ser
            215   220   225

Phe Thr Gly Val Leu Cys Thr Leu Ala Ile Thr Ile Trp Arg Leu
            230   235   240

Lys Pro Ser Ala Asp Cys Gly Pro Phe Arg Gly Leu Pro Leu Phe
            245   250   255

Ile His Ser Ile Tyr Ser Trp Ile Asp Thr Leu Ser Thr Arg Pro
            260   265   270

Gly Tyr Leu Trp Val Val Trp Ile Tyr Arg Asn Leu Ile Gly Ser
            275   280   285

Val His Phe Phe Phe Ile Leu Thr Leu Ile Val Leu Ile Ile Thr
            290   295   300

Tyr Leu Tyr Trp Gln Ile Thr Glu Gly Arg Lys Ile Met Ile Arg
            305   310   315

Leu Leu His Glu Gln Ile Ile Asn Glu Gly Lys Asp Lys Met Phe
            320   325   330

Leu Ile Glu Lys Leu Ile Lys Leu Gln Asp Met Glu Lys Lys Ala
            335   340   345

Asn Pro Ser Ser Leu Val Leu Glu Arg Arg Glu Val Glu Gln Gln
            350   355   360

Gly Phe Leu His Leu Gly Glu His Asp Gly Ser Leu Asp Leu Arg
            365   370   375

Ser Arg Arg Ser Val Gln Glu Gly Asn Pro Arg Ala
            380   385

<210> 92
<211> 509
<212> PRT
<213> Homo sapien

<400> 92
 Met Glu Arg Arg Arg Leu Trp Gly Ser Ile Gln Ser Arg Tyr Ile
  1   5   10   15

 Ser Met Ser Val Trp Thr Ser Pro Arg Arg Leu Val Glu Leu Ala
            20   25   30

 Gly Gln Ser Leu Leu Lys Asp Glu Ala Leu Ala Ile Ala Ala Leu
            35   40   45

 Glu Leu Leu Pro Arg Glu Leu Phe Pro Pro Leu Phe Met Ala Ala
            50   55   60

172

```
Phe Asp Gly Arg His Ser Gln Thr Leu Lys Ala Met Val Gln Ala
                65              70              75

Trp Pro Phe Thr Cys Leu Pro Leu Gly Val Leu Met Lys Gly Gln
                80              85              90

His Leu His Leu Glu Thr Phe Lys Ala Val Leu Asp Gly Leu Asp
                95              100             105

Val Leu Leu Ala Gln Glu Val Arg Pro Arg Arg Trp Lys Leu Gln
                110             115             120

Val Leu Asp Leu Arg Lys Asn Ser His Gln Asp Phe Trp Thr Val
                125             130             135

Trp Ser Gly Asn Arg Ala Ser Leu Tyr Ser Phe Pro Glu Pro Glu
                140             145             150

Ala Ala Gln Pro Met Thr Lys Lys Arg Lys Val Asp Gly Leu Ser
                155             160             165

Thr Glu Ala Glu Gln Pro Phe Ile Pro Val Glu Val Leu Val Asp
                170             175             180

Leu Phe Leu Lys Glu Gly Ala Cys Asp Glu Leu Phe Ser Tyr Leu
                185             190             195

Ile Glu Lys Val Lys Arg Lys Lys Asn Val Leu Arg Leu Cys Cys
                200             205             210

Lys Lys Leu Lys Ile Phe Ala Met Pro Met Gln Asp Ile Lys Met
                215             220             225

Ile Leu Lys Met Val Gln Leu Asp Ser Ile Glu Asp Leu Glu Val
                230             235             240

Thr Cys Thr Trp Lys Leu Pro Thr Leu Ala Lys Phe Ser Pro Tyr
                245             250             255

Leu Gly Gln Met Ile Asn Leu Arg Arg Leu Leu Leu Ser His Ile
                260             265             270

His Ala Ser Ser Tyr Ile Ser Pro Glu Lys Glu Glu Gln Tyr Ile
                275             280             285

Ala Gln Phe Thr Ser Gln Phe Leu Ser Leu Gln Cys Leu Gln Ala
                290             295             300

Leu Tyr Val Asp Ser Leu Phe Phe Leu Arg Gly Arg Leu Asp Gln
                305             310             315

Leu Leu Arg His Val Met Asn Pro Leu Glu Thr Leu Ser Ile Thr
                320             325             330

Asn Cys Arg Leu Ser Glu Gly Asp Val Met His Leu Ser Gln Ser
                335             340             345

Pro Ser Val Ser Gln Leu Ser Val Leu Ser Leu Ser Gly Val Met
```

173

```
                350                    355                    360
    Leu Thr Asp Val Ser Pro Glu Pro Leu Gln Ala Leu Leu Glu Arg
                365                    370                    375

    Ala Ser Ala Thr Leu Gln Asp Leu Val Phe Asp Glu Cys Gly Ile
                380                    385                    390

    Thr Asp Asp Gln Leu Leu Ala Leu Leu Pro Ser Leu Ser His Cys
                395                    400                    405

    Ser Gln Leu Thr Thr Leu Ser Phe Tyr Gly Asn Ser Ile Ser Ile
                410                    415                    420

    Ser Ala Leu Gln Ser Leu Leu Gln His Leu Ile Gly Leu Ser Asn
                425                    430                    435

    Leu Thr His Val Leu Tyr Pro Val Pro Leu Glu Ser Tyr Glu Asp
                440                    445                    450

    Ile His Gly Thr Leu His Leu Glu Arg Leu Ala Tyr Leu His Ala
                455                    460                    465

    Arg Leu Arg Glu Leu Leu Cys Glu Leu Gly Arg Pro Ser Met Val
                470                    475                    480

    Trp Leu Ser Ala Asn Pro Cys Pro His Cys Gly Asp Arg Thr Phe
                485                    490                    495

    Tyr Asp Pro Glu Pro Ile Leu Cys Pro Cys Phe Met Pro Asn
                500                    505

<210> 93
<211> 943
<212> PRT
<213> Homo sapien

<400> 93
    Met Thr Gln Arg Ser Ile Ala Gly Pro Ile Cys Asn Leu Lys Phe
     1               5                     10                    15

    Val Thr Leu Leu Val Ala Leu Ser Ser Glu Leu Pro Phe Leu Gly
                20                     25                    30

    Ala Gly Val Gln Leu Gln Asp Asn Gly Tyr Asn Gly Leu Leu Ile
                35                     40                    45

    Ala Ile Asn Pro Gln Val Pro Glu Asn Gln Asn Leu Ile Ser Asn
                50                     55                    60

    Ile Lys Glu Met Ile Thr Glu Ala Ser Phe Tyr Leu Phe Asn Ala
                65                     70                    75

    Thr Lys Arg Arg Val Phe Phe Arg Asn Ile Lys Ile Leu Ile Pro
                80                     85                    90

    Ala Thr Trp Lys Ala Asn Asn Asn Ser Lys Ile Lys Gln Glu Ser
                95                    100                    105
```

174

```
Tyr Glu Lys Ala Asn Val Ile Val Thr Asp Trp Tyr Gly Ala His
            110                 115                 120

Gly Asp Asp Pro Tyr Thr Leu Gln Tyr Arg Gly Cys Gly Lys Glu
            125                 130                 135

Gly Lys Tyr Ile His Phe Thr Pro Asn Phe Leu Leu Asn Asp Asn
            140                 145                 150

Leu Thr Ala Gly Tyr Gly Ser Arg Gly Arg Val Phe Val His Glu
            155                 160                 165

Trp Ala His Leu Arg Trp Gly Val Phe Asp Glu Tyr Ile Asn Asp
            170                 175                 180

Lys Pro Phe Tyr Ile Asn Gly Gln Asn Gln Ile Lys Val Thr Arg
            185                 190                 195

Cys Ser Ser Asp Ile Thr Gly Ile Phe Val Cys Glu Lys Gly Pro
            200                 205                 210

Cys Pro Gln Glu Asn Cys Ile Ile Ser Lys Leu Phe Lys Glu Gly
            215                 220                 225

Cys Thr Phe Ile Tyr Asn Ser Thr Gln Asn Ala Thr Ala Ser Ile
            230                 235                 240

Met Phe Met Gln Ser Leu Ser Ser Val Val Glu Phe Cys Asn Ala
            245                 250                 255

Ser Thr His Asn Gln Glu Ala Pro Asn Leu Gln Asn Gln Met Cys
            260                 265                 270

Ser Leu Arg Ser Ala Trp Asp Val Ile Thr Asp Ser Ala Asp Phe
            275                 280                 285

His His Ser Phe Pro Met Asn Gly Thr Glu Leu Pro Pro Pro Pro
            290                 295                 300

Thr Phe Ser Leu Val Gln Ala Gly Asp Lys Val Val Cys Leu Val
            305                 310                 315

Leu Asp Val Ser Ser Lys Met Ala Glu Ala Asp Arg Leu Leu Gln
            320                 325                 330

Leu Gln Gln Ala Ala Glu Phe Tyr Leu Met Gln Ile Val Glu Ile
            335                 340                 345

His Thr Phe Val Gly Ile Ala Ser Phe Asp Ser Lys Gly Glu Ile
            350                 355                 360

Arg Ala Gln Leu His Gln Ile Asn Ser Asn Asp Asp Arg Lys Leu
            365                 370                 375

Leu Val Ser Tyr Leu Pro Thr Thr Val Ser Ala Lys Thr Asp Ile
            380                 385                 390

Ser Ile Cys Ser Gly Leu Lys Lys Gly Phe Glu Val Val Glu Lys
```

175

```
                    395                    400                    405

Leu Asn Gly Lys Ala Tyr Gly Ser Val Met Ile Leu Val Thr Ser
                410                    415                    420

Gly Asp Asp Lys Leu Leu Gly Asn Cys Leu Pro Thr Val Leu Ser
                425                    430                    435

Ser Gly Ser Thr Ile His Ser Ile Ala Leu Gly Ser Ser Ala Ala
                440                    445                    450

Pro Asn Leu Glu Glu Leu Ser Arg Leu Thr Gly Gly Leu Lys Phe
                455                    460                    465

Phe Val Pro Asp Ile Ser Asn Ser Asn Ser Met Ile Asp Ala Phe
                470                    475                    480

Ser Arg Ile Ser Ser Gly Thr Gly Asp Ile Phe Gln Gln His Ile
                485                    490                    495

Gln Leu Glu Ser Thr Gly Glu Asn Val Lys Pro His His Gln Leu
                500                    505                    510

Lys Asn Thr Val Thr Val Asp Asn Thr Val Gly Asn Asp Thr Met
                515                    520                    525

Phe Leu Val Thr Trp Gln Ala Ser Gly Pro Pro Glu Ile Ile Leu
                530                    535                    540

Phe Asp Pro Asp Gly Arg Lys Tyr Tyr Thr Asn Asn Phe Ile Thr
                545                    550                    555

Asn Leu Thr Phe Arg Thr Ala Ser Leu Trp Ile Pro Gly Thr Ala
                560                    565                    570

Lys Pro Gly His Trp Thr Tyr Thr Leu Asn Asn Thr His His Ser
                575                    580                    585

Leu Gln Ala Leu Lys Val Thr Val Thr Ser Arg Ala Ser Asn Ser
                590                    595                    600

Ala Val Pro Pro Ala Thr Val Glu Ala Phe Val Glu Arg Asp Ser
                605                    610                    615

Leu His Phe Pro His Pro Val Met Ile Tyr Ala Asn Val Lys Gln
                620                    625                    630

Gly Phe Tyr Pro Ile Leu Asn Ala Thr Val Thr Ala Thr Val Glu
                635                    640                    645

Pro Glu Thr Gly Asp Pro Val Thr Leu Arg Leu Leu Asp Asp Gly
                650                    655                    660

Ala Gly Ala Asp Val Ile Lys Asn Asp Gly Ile Tyr Ser Arg Tyr
                665                    670                    675

Phe Phe Ser Phe Ala Ala Asn Gly Arg Tyr Ser Leu Lys Val His
                680                    685                    690
```

176

```
Val Asn His Ser Pro Ser Ile Ser Thr Pro Ala His Ser Ile Pro
            695             700             705

Gly Ser His Ala Met Tyr Val Pro Gly Tyr Thr Ala Asn Gly Asn
            710             715             720

Ile Gln Met Asn Ala Pro Arg Lys Ser Val Gly Arg Asn Glu Glu
            725             730             735

Glu Arg Lys Trp Gly Phe Ser Arg Val Ser Ser Gly Gly Ser Phe
            740             745             750

Ser Val Leu Gly Val Pro Ala Gly Pro His Pro Asp Val Phe Pro
            755             760             765

Pro Cys Lys Ile Ile Asp Leu Glu Ala Val Lys Val Glu Glu Glu
            770             775             780

Leu Thr Leu Ser Trp Thr Ala Pro Gly Glu Asp Phe Asp Gln Gly
            785             790             795

Gln Ala Thr Ser Tyr Glu Ile Arg Met Ser Lys Ser Leu Gln Asn
            800             805             810

Ile Gln Asp Asp Phe Asn Asn Ala Ile Leu Val Asn Thr Ser Lys
            815             820             825

Arg Asn Pro Gln Gln Ala Gly Ile Arg Glu Ile Phe Thr Phe Ser
            830             835             840

Pro Gln Ile Ser Thr Asn Gly Pro Glu His Gln Pro Asn Gly Glu
            845             850             855

Thr His Glu Ser His Arg Ile Tyr Val Ala Ile Arg Ala Met Asp
            860             865             870

Arg Asn Ser Leu Gln Ser Ala Val Ser Asn Ile Ala Gln Ala Pro
            875             880             885

Leu Phe Ile Pro Pro Asn Ser Asp Pro Val Pro Ala Arg Asp Tyr
            890             895             900

Leu Ile Leu Lys Gly Val Leu Thr Ala Met Gly Leu Ile Gly Ile
            905             910             915

Ile Cys Leu Ile Ile Val Val Thr His His Thr Leu Ser Arg Lys
            920             925             930

Lys Arg Ala Asp Lys Lys Glu Asn Gly Thr Lys Leu Leu
            935             940
```

<210> 94
<211> 492
<212> PRT
<213> Homo sapien

<400> 94
Met Ala Leu Asn Ser Gly Ser Pro Pro Ala Ile Gly Pro Tyr Tyr

177

```
1                   5                   10                  15

Glu Asn His Gly Tyr Gln Pro Glu Asn Pro Tyr Pro Ala Gln Pro
                20                  25                  30

Thr Val Val Pro Thr Val Tyr Glu Val His Pro Ala Gln Tyr Tyr
                35                  40                  45

Pro Ser Pro Val Pro Gln Tyr Ala Pro Arg Val Leu Thr Gln Ala
                50                  55                  60

Ser Asn Pro Val Val Cys Thr Gln Pro Lys Ser Pro Ser Gly Thr
                65                  70                  75

Val Cys Thr Ser Lys Thr Lys Lys Ala Leu Cys Ile Thr Leu Thr
                80                  85                  90

Leu Gly Thr Phe Leu Val Gly Ala Ala Leu Ala Ala Gly Leu Leu
                95                  100                 105

Trp Lys Phe Met Gly Ser Lys Cys Ser Asn Ser Gly Ile Glu Cys
                110                 115                 120

Asp Ser Ser Gly Thr Cys Ile Asn Pro Ser Asn Trp Cys Asp Gly
                125                 130                 135

Val Ser His Cys Pro Gly Gly Glu Asp Glu Asn Arg Cys Val Arg
                140                 145                 150

Leu Tyr Gly Pro Asn Phe Ile Leu Gln Met Tyr Ser Ser Gln Arg
                155                 160                 165

Lys Ser Trp His Pro Val Cys Gln Asp Asp Trp Asn Glu Asn Tyr
                170                 175                 180

Gly Arg Ala Ala Cys Arg Asp Met Gly Tyr Lys Asn Asn Phe Tyr
                185                 190                 195

Ser Ser Gln Gly Ile Val Asp Asp Ser Gly Ser Thr Ser Phe Met
                200                 205                 210

Lys Leu Asn Thr Ser Ala Gly Asn Val Asp Ile Tyr Lys Lys Leu
                215                 220                 225

Tyr His Ser Asp Ala Cys Ser Ser Lys Ala Val Val Ser Leu Arg
                230                 235                 240

Cys Leu Ala Cys Gly Val Asn Leu Asn Ser Ser Arg Gln Ser Arg
                245                 250                 255

Ile Val Gly Gly Glu Ser Ala Leu Pro Gly Ala Trp Pro Trp Gln
                260                 265                 270

Val Ser Leu His Val Gln Asn Val His Val Cys Gly Gly Ser Ile
                275                 280                 285

Ile Thr Pro Glu Trp Ile Val Thr Ala Ala His Cys Val Glu Lys
                290                 295                 300
```

178

```
Pro Leu Asn Asn Pro Trp His Trp Thr Ala Phe Ala Gly Ile Leu
            305             310                 315

Arg Gln Ser Phe Met Phe Tyr Gly Ala Gly Tyr Gln Val Gln Lys
            320             325                 330

Val Ile Ser His Pro Asn Tyr Asp Ser Lys Thr Lys Asn Asn Asp
            335             340                 345

Ile Ala Leu Met Lys Leu Gln Lys Pro Leu Thr Phe Asn Asp Leu
            350             355                 360

Val Lys Pro Val Cys Leu Pro Asn Pro Gly Met Met Leu Gln Pro
            365             370                 375

Glu Gln Leu Cys Trp Ile Ser Gly Trp Gly Ala Thr Glu Glu Lys
            380             385                 390

Gly Lys Thr Ser Glu Val Leu Asn Ala Ala Lys Val Leu Leu Ile
            395             400                 405

Glu Thr Gln Arg Cys Asn Ser Arg Tyr Val Tyr Asp Asn Leu Ile
            410             415                 420

Thr Pro Ala Met Ile Cys Ala Gly Phe Leu Gln Gly Asn Val Asp
            425             430                 435

Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Thr Ser Asn Asn
            440             445                 450

Asn Ile Trp Trp Leu Ile Gly Asp Thr Ser Trp Gly Ser Gly Cys
            455             460                 465

Ala Lys Ala Tyr Arg Pro Gly Val Tyr Gly Asn Val Met Val Phe
            470             475                 480

Thr Asp Trp Ile Tyr Arg Gln Met Lys Ala Asn Gly
            485             490

<210> 95
<211> 253
<212> PRT
<213> Homo sapien

<400> 95
 Met Ala Arg Ser Leu Leu Leu Pro Leu Gln Ile Leu Leu Leu Ser
   1           5                 10                  15

 Leu Ala Leu Glu Thr Ala Gly Glu Glu Ala Gln Gly Asp Lys Ile
            20              25                  30

 Ile Asp Gly Ala Pro Cys Ala Arg Gly Ser His Pro Trp Gln Val
            35              40                  45

 Ala Leu Leu Ser Gly Asn Gln Leu His Cys Gly Gly Val Leu Val
            50              55                  60

 Asn Glu Arg Trp Val Leu Thr Ala Ala His Cys Lys Met Asn Glu
```

179

Tyr Thr Val His Leu Gly Ser Asp Thr Leu Gly Asp Arg Arg Ala
　　　　　　　　80　　　　　　　　　　85　　　　　　　　　90

Gln Arg Ile Lys Ala Ser Lys Ser Phe Arg His Pro Gly Tyr Ser
　　　　　　　　95　　　　　　　　　100　　　　　　　　　105

Thr Gln Thr His Val Asn Asp Leu Met Leu Val Lys Leu Asn Ser
　　　　　　　　110　　　　　　　　　115　　　　　　　　　120

Gln Ala Arg Leu Ser Ser Met Val Lys Lys Val Arg Leu Pro Ser
　　　　　　　　125　　　　　　　　　130　　　　　　　　　135

Arg Cys Glu Pro Pro Gly Thr Thr Cys Thr Val Ser Gly Trp Gly
　　　　　　　　140　　　　　　　　　145　　　　　　　　　150

Thr Thr Thr Ser Pro Asp Val Thr Phe Pro Ser Asp Leu Met Cys
　　　　　　　　155　　　　　　　　　160　　　　　　　　　165

Val Asp Val Lys Leu Ile Ser Pro Gln Asp Cys Thr Lys Val Tyr
　　　　　　　　170　　　　　　　　　175　　　　　　　　　180

Lys Asp Leu Leu Glu Asn Ser Met Leu Cys Ala Gly Ile Pro Asp
　　　　　　　　185　　　　　　　　　190　　　　　　　　　195

Ser Lys Lys Asn Ala Cys Asn Gly Asp Ser Gly Gly Pro Leu Val
　　　　　　　　200　　　　　　　　　205　　　　　　　　　210

Cys Arg Gly Thr Leu Gln Gly Leu Val Ser Trp Gly Thr Phe Pro
　　　　　　　　215　　　　　　　　　220　　　　　　　　　225

Cys Gly Gln Pro Asn Asp Pro Gly Val Tyr Thr Gln Val Cys Lys
　　　　　　　　230　　　　　　　　　235　　　　　　　　　240

Phe Thr Lys Trp Ile Asn Asp Thr Met Lys Lys His Arg
　　　　　　　　245　　　　　　　　　250

<210> 96
<211> 339
<212> PRT
<213> Homo sapien

<400> 96
Met Glu Ser Arg Lys Asp Ile Thr Asn Gln Glu Glu Leu Trp Lys
　1　　　　　　　　5　　　　　　　　　10　　　　　　　　　15

Met Lys Pro Arg Arg Asn Leu Glu Glu Asp Asp Tyr Leu His Lys
　　　　　　　　20　　　　　　　　　25　　　　　　　　　30

Asp Thr Gly Glu Thr Ser Met Leu Lys Arg Pro Val Leu Leu His
　　　　　　　　35　　　　　　　　　40　　　　　　　　　45

Leu His Gln Thr Ala His Ala Asp Glu Phe Asp Cys Pro Ser Glu
　　　　　　　　50　　　　　　　　　55　　　　　　　　　60

Leu Gln His Thr Gln Glu Leu Phe Pro Gln Trp His Leu Pro Ile
　　　　　　　　65　　　　　　　　　70　　　　　　　　　75

```
Lys Ile Ala Ala Ile Ile Ala Ser Leu Thr Phe Leu Tyr Thr Leu
                80                  85                  90

Leu Arg Glu Val Ile His Pro Leu Ala Thr Ser His Gln Gln Tyr
                95                 100                 105

Phe Tyr Lys Ile Pro Ile Leu Val Ile Asn Lys Val Leu Pro Met
               110                 115                 120

Val Ser Ile Thr Leu Leu Ala Leu Val Tyr Leu Pro Gly Val Ile
               125                 130                 135

Ala Ala Ile Val Gln Leu His Asn Gly Thr Lys Tyr Lys Lys Phe
               140                 145                 150

Pro His Trp Leu Asp Lys Trp Met Leu Thr Arg Lys Gln Phe Gly
               155                 160                 165

Leu Leu Ser Phe Phe Phe Ala Val Leu His Ala Ile Tyr Ser Leu
               170                 175                 180

Ser Tyr Pro Met Arg Arg Ser Tyr Arg Tyr Lys Leu Leu Asn Trp
               185                 190                 195

Ala Tyr Gln Gln Val Gln Gln Asn Lys Glu Asp Ala Trp Ile Glu
               200                 205                 210

His Asp Val Trp Arg Met Glu Ile Tyr Val Ser Leu Gly Ile Val
               215                 220                 225

Gly Leu Ala Ile Leu Ala Leu Leu Ala Val Thr Ser Ile Pro Ser
               230                 235                 240

Val Ser Asp Ser Leu Thr Trp Arg Glu Phe His Tyr Ile Gln Ser
               245                 250                 255

Lys Leu Gly Ile Val Ser Leu Leu Leu Gly Thr Ile His Ala Leu
               260                 265                 270

Ile Phe Ala Trp Asn Lys Trp Ile Asp Ile Lys Gln Phe Val Trp
               275                 280                 285

Tyr Thr Pro Pro Thr Phe Met Ile Ala Val Phe Leu Pro Ile Val
               290                 295                 300

Val Leu Ile Phe Lys Ser Ile Leu Phe Leu Pro Cys Leu Arg Lys
               305                 310                 315

Lys Ile Leu Lys Ile Arg His Gly Trp Glu Asp Val Thr Lys Ile
               320                 325                 330

Asn Lys Thr Glu Ile Cys Ser Gln Leu
               335

<210> 97
<211> 420
<212> PRT
<213> Homo sapien
```

<400> 97

```
Met Asp Ser Ser Pro Ser Leu Pro Leu Ile Arg Thr Pro Glu Ser
  1   .           5                  10                  15

Ser Leu His Glu Ala Leu Asp Gln Cys Met Thr Ala Leu Asp Leu
                 20              ·  25                  30

Phe Leu Thr Asn Gln Phe Ser Glu Ala Leu Ser Tyr Leu Lys Pro
                 35                  40                  45

Arg Thr Lys Glu Ser Met Tyr His Ser Leu Thr Tyr Ala Thr Ile
                 50                  55                  60

Leu Glu Met Gln Ala Met Met Thr Phe Asp Pro Gln Asp Ile Leu
                 65                  70                  75

Leu Ala Gly Asn Met Met Lys Glu Ala Gln Met Leu Cys Gln Arg
                 80                  85                  90

His Arg Arg Lys Ser Ser Val Thr Asp Ser Phe Ser Ser Leu Val
                 95                 100                 105

Asn Arg Pro Thr Leu Gly Gln Phe Thr Glu Glu Glu Ile His Ala
                110                 115                 120

Glu Val Cys Tyr Ala Glu Cys Leu Leu Gln Arg Ala Ala Leu Thr
                125                 130                 135

Phe Leu Gln Gly Ser Ser His Gly Gly Ala Val Arg Pro Arg Ala
                140                 145                 150

Leu His Asp Pro Ser His Ala Cys Ser Cys Pro Pro Gly Pro Gly
                155                .160                 165

Arg Gln His Leu Phe Leu Leu Gln Asp Glu Asn Met Val Ser Phe
                170                 175                 180

Ile Lys Gly Gly Ile Lys Val Arg Asn Ser Tyr Gln Thr Tyr Lys
                185                 190                 195

Glu Leu Asp Ser Leu Val Gln Ser Ser Gln Tyr Cys Lys Gly Glu
                200                 205                 210

Asn His Pro His Phe Glu Gly Gly Val Lys Leu Gly Val Gly Ala
                215                 220                 225

Phe Asn Leu Thr Leu Ser Met Leu Pro Thr Arg Ile Leu Arg Leu
                230                 235                 240

Leu Glu Phe Val Gly Phe Ser Gly Asn Lys Asp Tyr Gly Leu Leu
  '             245                 250                 255

Gln Leu Glu Glu Gly Ala Ser Gly His Ser Phe Arg Ser Val Leu
                260                 265                 270

Cys Val Met Leu Leu Leu Cys Tyr His Thr Phe Leu Thr Phe Val
                275                 280                 285
```

182

```
Leu Gly Thr Gly Asn Val Asn Ile Glu Glu Ala Glu Lys Leu Leu
            290                 295                 300

Lys Pro Tyr Leu Asn Arg Tyr Pro Lys Gly Ala Ile Phe Leu Phe
            305                 310                 315

Phe Ala Gly Arg Ile Glu Val Ile Lys Gly Asn Ile Asp Ala Val
            320                 325                 330

Ser Asp Gly Gly Pro Gly Arg Gly Trp Gly Ser Leu Gly Val Ser
            335                 340                 345

Gln Thr Ser Arg Lys Ser Gly Thr Cys Asp Ile Leu Arg Asp Arg
            350                 355                 360

Ile Asp Trp Gly Arg Gly Gly Gly Gln Glu Arg Thr Asn Gln Arg
            365                 370                 375

Ala Gly Ala Gly Glu Ala Leu Leu Ala Glu Gln Pro Gly Lys Thr
            380                 385                 390

Arg Glu Glu Glu Ala Phe Val Val Pro Gly Ile Leu Thr Gly Arg
            395                 400                 405

Tyr Arg Thr Ala Ala Leu Gln Trp Arg Glu Val Glu Gly Gly Ala
            410                 415                 420
```

<210> 98
<211> 514
<212> PRT
<213> Homo sapien

<400> 98
```
Met Ala Asp Ala Glu Val Ile Ile Leu Pro Lys Lys His Lys Lys
  1               5                  10                  15

Lys Lys Glu Arg Lys Ser Leu Pro Glu Glu Asp Val Ala Glu Ile
             20                  25                  30

Gln His Ala Glu Glu Phe Leu Ile Lys Pro Glu Ser Lys Val Ala
             35                  40                  45

Lys Leu Asp Thr Ser Gln Trp Pro Leu Leu Leu Lys Asn Phe Asp
             50                  55                  60

Lys Leu Asn Val Arg Thr Thr His Tyr Thr Pro Leu Ala Cys Gly
             65                  70                  75

Ser Asn Pro Leu Lys Arg Glu Ile Gly Asp Tyr Ile Arg Thr Gly
             80                  85                  90

Phe Ile Asn Leu Asp Lys Pro Ser Asn Pro Ser Ser His Glu Val
             95                 100                 105

Val Ala Trp Ile Arg Arg Ile Leu Arg Val Glu Lys Thr Gly His
            110                 115                 120

Ser Gly Thr Leu Asp Pro Lys Val Thr Gly Cys Leu Ile Val Cys
```

183

```
              125                    130                   135

Ile Glu Arg Ala Thr Arg Leu Val Lys Ser Gln Gln Ser Ala Gly
              140                    145                   150

Lys Glu Tyr Val Gly Ile Val Arg Leu His Asn Ala Ile Glu Gly
              155                    160                   165

Gly Thr Gln Leu Ser Arg Ala Leu Glu Thr Leu Thr Gly Ala Leu
              170                    175                   180

Phe Gln Arg Pro Pro Leu Ile Ala Ala Val Lys Arg Gln Leu Arg
              185                    190                   195

Val Arg Thr Ile Tyr Glu Ser Lys Met Ile Glu Tyr Asp Pro Glu
              200                    205                   210

Arg Arg Leu Gly Ile Phe Trp Val Ser Cys Glu Ala Gly Thr Tyr
              215                    220                   225

Ile Arg Thr Leu Cys Val His Leu Gly Leu Leu Leu Gly Val Gly
              230                    235                   240

Gly Gln Met Gln Glu Leu Arg Arg Val Arg Ser Gly Val Met Ser
              245                    250                   255

Glu Lys Asp His Met Val Thr Met His Asp Val Leu Asp Ala Gln
              260                    265                   270

Trp Leu Tyr Asp Asn His Lys Asp Glu Ser Tyr Leu Arg Arg Val
              275                    280                   285

Val Tyr Pro Leu Glu Lys Leu Leu Thr Ser His Lys Arg Leu Val
              290                    295                   300

Met Lys Asp Ser Ala Val Asn Ala Ile Cys Tyr Gly Ala Lys Ile
              305                    310                   315

Met Leu Pro Gly Val Leu Arg Tyr Glu Asp Gly Ile Glu Val Asn
              320                    325                   330

Gln Glu Ile Val Val Ile Thr Thr Lys Gly Glu Ala Ile Cys Met
              335                    340                   345

Ala Ile Ala Leu Met Thr Thr Ala Val Ile Ser Thr Cys Asp His
              350                    355                   360

Gly Ile Val Ala Lys Ile Lys Arg Val Ile Met Glu Arg Asp Thr
              365                    370                   375

Tyr Pro Arg Lys Trp Gly Leu Gly Pro Lys Ala Ser Gln Lys Lys
              380                    385                   390

Leu Met Ile Lys Gln Gly Leu Leu Asp Lys His Gly Lys Pro Thr
              395                    400                   405

Asp Ser Thr Pro Ala Thr Trp Lys Gln Glu Tyr Val Asp Tyr Ser
              410                    415                   420
```

184

```
Glu Ser Ala Lys Lys Glu Val Val Ala Glu Val Val Lys Ala Pro
              425             430             435

Gln Val Val Ala Glu Ala Ala Lys Thr Ala Lys Arg Lys Arg Glu
              440             445 ·           450

Ser Glu Ser Glu Ser Asp Glu Thr Pro Pro Ala Ala Pro Gln Leu
              455             460             465

Ile Lys Lys Glu Lys Lys Lys Ser Lys Lys Asp Lys Lys Ala Lys
              470             475             480

Ala Gly Leu Glu Ser Gly Ala Glu Pro Gly Asp Gly Asp Ser Asp
              485             490             495

Thr Thr Lys Lys Lys Lys Lys Lys Lys Lys Ala Lys Glu Val Glu
              500             505             510

Leu Val Ser Glu
```

<210> 99
<211> 313
<212> PRT
<213> Homo sapien

<400> 99
```
Met Ala Leu Arg Ile Cys Val Thr Tyr Thr Pro Ala Leu Pro Ile
  1               5              10              15

Gly Leu Cys Thr Arg Cys Cys Leu Cys Leu Glu Gln Ser Pro Ser
             20              25              30

Trp Cys His Cys Leu Arg Gly Val Ser Phe Leu Thr Phe His Leu
             35              40              45

His Gln Ser Val Pro Leu Gly Asp Arg Asp Ser Leu Leu Met Phe
             50              55              60

Thr Arg Gln Ala Gly His Phe Val Glu Gly Ser Lys Ala Gly Arg
             65              70              75

Ser Arg Gly Arg Leu Cys Leu Ser Gln Ala Leu Arg Val Ala Val
             80              85              90

Arg Gly Ala Phe Val Ser Leu Trp Phe Ala Ala Gly Ala Gly Asp
             95             100             105

Arg Glu Arg Asn Lys Gly Asp Lys Gly Ala Gln Thr Gly Ala Gly
             110             115             120

Leu Ser Gln Glu Ala Glu Asp Val Asp Val Ser Arg Ala Arg Arg
             125             130             135

Val Thr Asp Ala Pro Gln Gly Thr Leu Cys Gly Thr Gly Asn Arg
             140             145             150

Asn Ser Gly Ser Gln Ser Ala Arg Ala Val Gly Val Ala His Leu
```

185

```
                   155                     160                     165
Gly Glu Ala Phe Arg Val Gly Val Glu Gln Ala Ile Ser Ser Cys
                   170                     175                     180
Pro Glu Glu Val His Gly Arg His Gly Leu Ser Met Glu Ile Met
                   185                     190                     195
Trp Ala Arg Met Asp Val Ala Leu Arg Ser Pro Gly Arg Gly Leu
                   200                     205                     210
Leu Ala Gly Ala Gly Ala Leu Cys Val Thr Leu Ala Glu Ser Ser
                   215                     220                     225
Cys Pro Asp Tyr Glu Arg Gly Arg Arg Ala Cys Leu Thr Leu His
                   230                     235                     240
Arg His Pro Thr Pro His Cys Ser Thr Trp Gly Leu Pro Leu Arg
                   245                     250                     255
Val Ala Gly Ser Trp Leu Thr Val Val Thr Val Glu Ala Leu Gly
                   260                     265                     270
Gly Trp Arg Met Gly Val Arg Arg Thr Gly Gln Val Gly Pro Thr
                   275                     280                     285
Met His Pro Pro Pro Val Ser Gly Ala Ser Pro Leu Leu Leu His
                   290                     295                     300
His Leu Leu Leu Leu Leu Leu Ile Ile Ile Leu Thr Cys
                   305                     310
```

<210> 100
<211> 132
<212> PRT
<213> Homo sapien

<400> 100
```
Met Gly Ile Val Ala Asn Phe Gln Glu Leu Ala Val Pro Val Val
  1               5                      10                      15
His Asp Gly Gly Ala Leu Leu Ala Phe Val Cys Gly Val Val Tyr
                   20                     25                      30
Thr Leu Leu Gln Ser Ile Ile Ser Tyr Lys Ser Cys Pro Gln Trp
                   35                     40                      45
Asn Ser Leu Ser Thr Cys His Ile Arg Met Val Ile Ser Ala Val
                   50                     55                      60
Ser Cys Ala Ala Val Ile Pro Met Ile Val Cys Ala Ser Leu Ile
                   65                     70                      75
Ser Ile Thr Lys Leu Glu Trp Asn Pro Arg Glu Lys Asp Tyr Val
                   80                     85                      90
Tyr His Val Val Ser Ala Ile Cys Glu Trp Thr Val Ala Phe Gly
                   95                     100                     105
```

186

Phe Ile Phe Tyr Phe Leu Thr Phe Ile Gln Asp Phe Gln Ser Val
                    110   115   120

Thr Leu Arg Ile Ser Thr Glu Ile Asn Gly Asp Ile
                125   130

<210> 101
<211> 416
<212> PRT
<213> Homo sapien

<400> 101
Met Pro Arg Gln Leu Ser Ala Ala Ala Leu Phe Ala Ser Leu
  1   5   10   15

Ala Val Ile Leu His Asp Gly Ser Gln Met Arg Ala Lys Ala Phe
                20   25   30

Pro Glu Thr Arg Asp Tyr Ser Gln Pro Thr Ala Ala Ala Thr Val
                35   40   45

Gln Asp Ile Lys Lys Pro Val Gln Gln Pro Ala Lys Gln Ala Pro
                50   55   60

His Gln Thr Leu Ala Ala Arg Phe Met Asp Gly His Ile Thr Phe
                65   70   75

Gln Thr Ala Ala Thr Val Lys Ile Pro Thr Thr Thr Pro Ala Thr
                80   85   90

Thr Lys Asn Thr Ala Thr Thr Ser Pro Ile Thr Tyr Thr Leu Val
                95   100   105

Thr Thr Gln Ala Thr Pro Asn Asn Ser His Thr Ala Pro Pro Val
                110   115   120

Thr Glu Val Thr Val Gly Pro Ser Leu Ala Pro Tyr Ser Leu Pro
                125   130   135

Pro Thr Ile Thr Pro Pro Ala His Thr Ala Gly Thr Ser Ser Ser
                140   145   150

Thr Val Ser His Thr Thr Gly Asn Thr Thr Gln Pro Ser Asn Gln
                155   160   165

Thr Thr Leu Pro Ala Thr Leu Ser Ile Ala Leu His Lys Ser Thr
                170   175   180

Thr Gly Gln Lys Pro Asp Gln Pro Thr His Ala Pro Gly Thr Thr
                185   190   195

Ala Ala Ala His Asn Thr Thr Arg Thr Ala Ala Pro Ala Ser Thr
                200   205   210

Val Pro Gly Pro Thr Leu Ala Pro Gln Pro Ser Ser Val Lys Thr
                215   220   225

Gly Ile Tyr Gln Val Leu Asn Gly Ser Arg Leu Cys Ile Lys Ala

```
Glu Met Gly Ile Gln Leu Ile Val Gln Asp Lys Glu Ser Val Phe
                245                 250                 255

Ser Pro Arg Arg Tyr Phe Asn Ile Asp Pro Asn Ala Thr Gln Ala
                260                 265                 270

Ser Gly Asn Cys Gly Thr Arg Lys Ser Asn Leu Leu Leu Asn Phe
                275                 280                 285

Gln Gly Gly Phe Val Asn Leu Thr Phe Thr Lys Asp Glu Glu Ser
                290                 295                 300

Tyr Tyr Ile Ser Glu Val Gly Ala Tyr Leu Thr Val Ser Asp Pro
                305                 310                 315

Glu Thr Val Tyr Gln Gly Ile Lys His Ala Val Val Met Phe Gln
                320                 325                 330

Thr Ala Val Gly His Ser Phe Lys Cys Val Ser Glu Gln Ser Leu
                335                 340                 345

Gln Leu Ser Ala His Leu Gln Val Lys Thr Thr Asp Val Gln Leu
                350                 355                 360

Gln Ala Phe Asp Phe Glu Asp Asp His Phe Gly Asn Val Asp Glu
                365                 370                 375

Cys Ser Ser Asp Tyr Thr Ile Val Leu Pro Val Ile Gly Ala Ile
                380                 385                 390

Val Val Gly Leu Cys Leu Met Gly Met Gly Val Tyr Lys Ile Arg
                395                 400                 405

Leu Arg Cys Gln Ser Ser Gly Tyr Gln Arg Ile
                410                 415
```

<210> 102
<211> 134
<212> PRT
<213> Homo sapien

<400> 102
```
Met Thr Glu Glu Pro Ile Lys Glu Ile Leu Gly Ala Pro Lys Ala
  1               5                  10                  15

His Met Ala Ala Thr Met Glu Lys Ser Pro Lys Ser Glu Val Val
                20                  25                  30

Ile Thr Thr Val Pro Leu Val Ser Glu Ile Gln Leu Met Ala Ala
                35                  40                  45

Thr Gly Gly Thr Glu Leu Ser Cys Tyr Arg Cys Ile Ile Pro Phe
                50                  55                  60

Ala Val Val Val Phe Ile Ala Gly Ile Val Val Thr Ala Val Ala
                65                  70                  75
```

```
Tyr Ser Phe Asn Ser His Gly Ser Ile Ile Ser Ile Phe Gly Leu
                80                      85                   90

Val Val Leu Ser Ser Gly Leu Phe Leu Leu Ala Ser Ser Ala Leu
                95                     100                  105

Cys Trp Lys Val Arg Gln Arg Ser Lys Lys Ala Lys Arg Arg Glu
               110                     115                  120

Ser Gln Thr Ala Leu Val Ala Asn Gln Arg Ser Leu Phe Ala
               125                     130
```

<210> 103
<211> 318
<212> PRT
<213> Homo sapien

<400> 103
```
Met Leu Ser Leu Leu His Ala Ser Thr Leu Ala Val Leu Gly Ala
  1              5                      10                   15

Leu Cys Val Tyr Gly Ala Gly His Leu Glu Gln Pro Gln Ile Ser
                20                      25                   30

Ser Thr Lys Thr Leu Ser Lys Thr Ala Arg Leu Glu Cys Val Val
                35                      40                   45

Ser Gly Ile Thr Ile Ser Ala Thr Ser Val Tyr Trp Tyr Arg Glu
                50                      55                   60

Arg Pro Gly Glu Val Ile Gln Phe Leu Val Ser Ile Ser Tyr Asp
                65                      70                   75

Gly Thr Val Arg Lys Glu Ser Gly Ile Pro Ser Gly Lys Phe Glu
                80                      85                   90

Val Asp Arg Ile Pro Glu Thr Ser Thr Ser Thr Leu Thr Ile His
                95                     100                  105

Asn Val Glu Lys Gln Asp Ile Ala Thr Tyr Tyr Cys Ala Leu Trp
               110                     115                  120

Glu Val Arg Leu Ala Asn Gln Glu Leu Gly Lys Lys Ile Lys Val
               125                     130                  135

Phe Gly Pro Gly Thr Lys Leu Ile Ile Thr Asp Lys Gln Leu Asp
               140                     145                  150

Ala Asp Val Ser Pro Lys Pro Thr Ile Phe Leu Pro Ser Ile Ala
               155                     160                  165

Glu Thr Lys Leu Gln Lys Ala Gly Thr Tyr Leu Cys Leu Leu Glu
               170                     175                  180

Lys Phe Phe Pro Asp Val Ile Lys Ile His Trp Gln Glu Lys Lys
               185                     190                  195

Ser Asn Thr Ile Leu Gly Ser Gln Glu Gly Asn Thr Met Lys Thr
```

189

Asn Asp Thr Tyr Met Lys Phe Ser Trp Leu Thr Val Pro Glu Lys
            215   220   225

Ser Leu Asp Lys Glu His Arg Cys Ile Val Arg His Glu Asn Asn
            230   235   240

Lys Asn Gly Val Asp Gln Glu Ile Ile Phe Pro Pro Ile Lys Thr
            245   250   255

Asp Val Ile Thr Met Asp Pro Lys Asp Asn Cys Ser Lys Asp Ala
            260   265   270

Asn Asp Thr Leu Leu Leu Gln Leu Thr Asn Thr Ser Ala Tyr Tyr
            275   280   285

Thr Tyr Leu Leu Leu Leu Leu Lys Ser Val Val Tyr Phe Ala Ile
            290   295   300

Ile Thr Cys Cys Leu Leu Arg Arg Thr Ala Phe Cys Cys Asn Gly
            305   310   315

Glu Lys Ser

<210> 104
<211> 440
<212> PRT
<213> Homo sapien

<400> 104
 Met Asn Tyr Ser Leu His Leu Ala Phe Val Cys Leu Ser Leu Phe
  1   5   10   15

 Thr Glu Arg Met Cys Ile Gln Gly Ser Gln Phe Asn Val Glu Val
            20   25   30

 Gly Arg Ser Asp Lys Leu Ser Leu Pro Gly Phe Glu Asn Leu Thr
            35   40   45

 Ala Gly Tyr Asn Lys Phe Leu Arg Pro Asn Phe Gly Gly Glu Pro
            50   55   60

 Val Gln Ile Ala Leu Thr Leu Asp Ile Ala Ser Ile Ser Ser Ile
            65   70   75

 Ser Glu Ser Asn Met Asp Tyr Thr Ala Thr Ile Tyr Leu Arg Gln
            80   85   90

 Arg Trp Met Asp Gln Arg Leu Val Phe Glu Gly Asn Lys Ser Phe
            95   100   105

 Thr Leu Asp Ala Arg Leu Val Glu Phe Leu Trp Val Pro Asp Thr
            110   115   120

 Tyr Ile Val Glu Ser Lys Lys Ser Phe Leu His Glu Val Thr Val
            125   130   135

```
Gly Asn Arg Leu Ile Arg Leu Phe Ser Asn Gly Thr Val Leu Tyr
            140             145             150

Ala Leu Arg Ile Thr Thr Thr Val Ala Cys Asn Met Asp Leu Ser
            155             160             165

Lys Tyr Pro Met Asp Thr Gln Thr Cys Lys Leu Gln Leu Glu Ser
            170             175             180

Trp Gly Tyr Asp Gly Asn Asp Val Glu Phe Thr Trp Leu Arg Gly
            185             190             195

Asn Asp Ser Val Arg Gly Leu Glu His Leu Arg Leu Ala Gln Tyr
            200             205             210

Thr Ile Glu Arg Tyr Phe Thr Leu Val Thr Arg Ser Gln Gln Glu
            215             220             225

Thr Gly Asn Tyr Thr Arg Leu Val Leu Gln Phe Glu Leu Arg Arg
            230             235             240

Asn Val Leu Tyr Phe Ile Leu Glu Thr Tyr Val Pro Ser Thr Phe
            245             250             255

Leu Val Val Leu Ser Trp Val Ser Phe Trp Ile Ser Leu Asp Ser
            260             265             270

Val Pro Ala Arg Thr Cys Ile Gly Val Thr Thr Val Leu Ser Met
            275             280             285

Thr Thr Leu Met Ile Gly Ser Arg Thr Ser Leu Pro Asn Thr Asn
            290             295             300

Cys Phe Ile Lys Ala Ile Asp Val Tyr Leu Gly Ile Cys Phe Ser
            305             310             315

Phe Val Phe Gly Ala Leu Leu Glu Tyr Ala Val Ala His Tyr Ser
            320             325             330

Ser Leu Gln Gln Met Ala Ala Lys Asp Arg Gly Thr Thr Lys Glu
            335             340             345

Val Glu Glu Val Ser Ile Thr Asn Ile Ile Asn Ser Ser Ile Ser
            350             355             360

Ser Phe Lys Arg Lys Ile Ser Phe Ala Ser Ile Glu Ile Ser Ser
            365             370             375

Asp Asn Val Asp Tyr Ser Asp Leu Thr Met Lys Thr Ser Asp Lys
            380             385             390

Phe Lys Phe Val Phe Arg Glu Lys Met Gly Arg Ile Val Asp Tyr
            395             400             405

Phe Thr Ile Gln Asn Pro Ser Asn Val Asp His Tyr Ser Lys Leu
            410             415             420

Leu Phe Pro Leu Ile Phe Met Leu Ala Asn Val Phe Tyr Trp Ala
```

Tyr Tyr Met Tyr Phe
                    440

<210> 105
<211> 508
<212> PRT
<213> Homo sapien

<400> 105
Met Ile Leu Val Leu Leu Cys Ala Phe Leu Ile Pro Cys Pro Pro
 1   5   10   15

Arg Asp Leu His Ser Thr Trp Ser Arg His Leu Gly Ser Gln Gly
                20   25   30

Gly Gly Asp Leu Ser Pro Leu Glu Leu Ala Asp Val Asn Gly Asp
                35   40   45

Gly Leu Arg Asp Val Leu Leu Ser Phe Val Met Ser Arg Asn Gly
                50   55   60

Ser Ala Val Gly Val Ser Arg Pro Ala Ala Asn Leu Val Cys Leu
                65   70   75

Ser Gly Met Asn Gly Ser Thr Leu Trp Ser Ser Leu Leu Pro Glu
                80   85   90

Glu Ala Arg Asp Ile Thr Cys Leu Glu Leu Met Pro Gly Ser Leu
                95   100   105

Ala Glu Thr Ile Cys Leu Val Thr Gly Thr His Lys Met Leu Ser
                110   115   120

Ala Phe Asn Ala Thr Ser Gly Lys Ala Ile Trp Thr Leu Asn Pro
                125   130   135

Asn Tyr Leu Ser Asn Gly Thr Leu Ala Ala Pro Val Val Val Leu
                140   145   150

Pro Asp Leu Asp Glu Asp Gly Val Arg Asp Leu Val Val Leu Ala
                155   160   165

Ile Gly Glu Leu Gln Pro Asp Leu Cys Phe Leu Leu Val Ser Gly
                170   175   180

Arg Thr Gly Asn Pro Val Gly Arg Pro Val Lys Tyr Asn Ile Val
                185   190   195

Gly Val Gly Asn Leu Ile Gly Pro Gln Val Tyr Ile Thr Thr Asn
                200   205   210

Gly Ala Val Tyr Ile Leu Phe Gly Phe Gly Asn Ile Gln Ala Val
                215   220   225

Ala Leu Arg Asp Ile Phe Val Gln Ala Gln Asn Arg Asp Ser Ser
                230   235   240

192

```
Pro Pro Ser Leu Gln Ile Glu Glu Pro Glu Trp Glu Lys Arg Arg
                245             250             255

Ser Ile Asn Leu Ser Glu Leu Ile Asp Val Tyr Ser Asp Gly Val
                260             265             270

Glu Leu Leu Gln Met Val Lys Ala Pro Asp Ser Asn Cys Ser Asn
                275             280             285

Leu Leu Ile Thr Thr Arg Gln Ser Leu Val Leu Leu Arg Gly Gln
                290             295             300

Asn Leu Thr Pro Tyr Trp Ala Leu Arg Leu Gln Gly Leu Arg Ser
                305             310             315

Gln Pro Thr Pro Gly Tyr Phe Thr Asp Asp Gln Thr Leu Asp Phe
                320             325             330

Leu Leu Gln Ile Gln Asp Gly Val Gly Met Lys Lys Met Met Val
                335             340             345

Val Asp Gly Asp Ser Gly Ser Ile Val Trp Ser Tyr Arg Ala Pro
                350             355             360

Cys His Met Lys Glu Thr Pro Ala Thr Ser Ala Val Thr Ser Asp
                365             370             375

Gln Lys Ser Val Phe Leu Phe Trp Ala Glu Gly Leu Ser Ala Ala
                380             385             390

Ser Pro Asn Ser Asp Ile Ile Leu Gly Thr Glu Pro Pro Ser Leu
                395             400             405

His His Leu Tyr Leu Leu His Pro Ala Phe Pro Ser Ile Leu Leu
                410             415             420

Asp Leu Ala Asn Thr Thr Gly Thr Val Thr Ala Ser Glu Val Gly
                425             430             435

Ile Asn Asp Leu Trp Lys Asp Ala Phe Tyr Val Thr Arg Thr Thr
                440             445             450

Gly Pro Ser Ser Glu Gly His Pro Ala Ala Leu Val Val Ser Lys
                455             460             465

Leu Ser Leu Arg Trp Ala Leu Met Glu Gly Gln Met Ala Gln Leu
                470             475             480

Gln Glu Ser Thr Pro Lys Ile Gly Arg Gly Glu Leu Arg Arg Phe
                485             490             495

Leu Ser Arg Ile Lys Phe Val Glu Ala Pro Tyr Glu Ile
                500             505
```

<210> 106
<211> 132
<212> PRT
<213> Homo sapien

193

<400> 106

```
Met Ser Asn Lys Phe Leu Gly Thr Trp Lys Leu Val Ser Ser Glu
 1               5                  10                  15

Asn Phe Asp Asp Tyr Met Lys Ala Leu Gly Val Gly Leu Ala Thr
                20                  25                  30

Arg Lys Leu Gly Asn Leu Ala Lys Pro Thr Val Ile Ile Ser Lys
                35                  40                  45

Lys Gly Asp Ile Ile Thr Ile Arg Thr Glu Ser Thr Phe Lys Asn
                50                  55                  60

Thr Glu Ile Ser Phe Lys Leu Gly Gln Glu Phe Glu Glu Thr Thr
                65                  70                  75

Ala Asp Asn Arg Lys Thr Lys Ser Ile Val Thr Leu Gln Arg Gly
                80                  85                  90

Ser Leu Asn Gln Val Gln Arg Trp Asp Gly Lys Glu Thr Thr Ile
                95                 100                 105

Lys Arg Lys Leu Val Asn Gly Lys Met Val Ala Glu Cys Lys Met
               110                 115                 120

Lys Gly Val Val Cys Thr Arg Ile Tyr Glu Lys Val
               125                 130
```

<210> 107
<211> 518
<212> PRT
<213> Homo sapien

<400> 107

```
Met Gly Ala Leu Ala Arg Ala Leu Leu Leu Pro Leu Leu Ala Gln
 1               5                  10                  15

Trp Leu Leu Arg Ala Ala Pro Glu Leu Ala Pro Ala Pro Phe Thr
                20                  25                  30

Leu Pro Leu Arg Val Ala Ala Ala Thr Asn Arg Val Val Ala Pro
                35                  40                  45

Thr Pro Gly Pro Gly Thr Pro Ala Glu Arg His Ala Asp Gly Leu
                50                  55                  60

Ala Leu Ala Leu Glu Pro Ala Leu Ala Ser Pro Ala Gly Ala Ala
                65                  70                  75

Asn Phe Leu Ala Met Val Asp Asn Leu Gln Gly Asp Ser Gly Arg
                80                  85                  90

Gly Tyr Tyr Leu Glu Met Leu Ile Gly Thr Pro Pro Gln Lys Leu
                95                 100                 105

Gln Ile Leu Val Asp Thr Gly Ser Ser Asn Phe Ala Val Ala Gly
               110                 115                 120
```

```
Thr Pro His Ser Tyr Ile Asp Thr Tyr Phe Asp Thr Glu Arg Ser
             125             130             135

Ser Thr Tyr Arg Ser Lys Gly Phe Asp Val Thr Val Lys Tyr Thr
             140             145             150

Gln Gly Ser Trp Thr Gly Phe Val Gly Glu Asp Leu Val Thr Ile
             155             160             165

Pro Lys Gly Phe Asn Thr Ser Phe Leu Val Asn Ile Ala Thr Ile
             170             175             180

Phe Glu Ser Glu Asn Phe Phe Leu Pro Gly Ile Lys Trp Asn Gly
             185             190             195

Ile Leu Gly Leu Ala Tyr Ala Thr Leu Ala Lys Pro Ser Ser Ser
             200             205             210

Leu Glu Thr Phe Phe Asp Ser Leu Val Thr Gln Ala Asn Ile Pro
             215             220             225

Asn Val Phe Ser Met Gln Met Cys Gly Ala Gly Leu Pro Val Ala
             230             235             240

Gly Ser Gly Thr Asn Gly Gly Ser Leu Val Leu Gly Gly Ile Glu
             245             250             255

Pro Ser Leu Tyr Lys Gly Asp Ile Trp Tyr Thr Pro Ile Lys Glu
             260             265             270

Glu Trp Tyr Tyr Gln Ile Glu Ile Leu Lys Leu Glu Ile Gly Gly
             275             280             285

Gln Ser Leu Asn Leu Asp Cys Arg Glu Tyr Asn Ala Asp Lys Ala
             290             295             300

Ile Val Asp Ser Gly Thr Thr Leu Leu Arg Leu Pro Gln Lys Val
             305             310             315

Phe Asp Ala Val Val Glu Ala Val Ala Arg Ala Ser Leu Ile Pro
             320             325             330

Glu Phe Ser Asp Gly Phe Trp Thr Gly Ser Gln Leu Ala Cys Trp
             335             340             345

Thr Asn Ser Glu Thr Pro Trp Ser Tyr Phe Pro Lys Ile Ser Ile
             350             355             360

Tyr Leu Arg Asp Glu Asn Ser Ser Arg Ser Phe Arg Ile Thr Ile
             365             370             375

Leu Pro Gln Leu Tyr Ile Gln Pro Met Met Gly Ala Gly Leu Asn
             380             385             390

Tyr Glu Cys Tyr Arg Phe Gly Ile Ser Pro Ser Thr Asn Ala Leu
             395             400             405

Val Ile Gly Ala Thr Val Met Glu Gly Phe Tyr Val Ile Phe Asp
```

195

Arg Ala Gln Lys Arg Val Gly Phe Ala Ala Ser Pro Cys Ala Glu
            425   430   435

Ile Ala Gly Ala Ala Val Ser Glu Ile Ser Gly Pro Phe Ser Thr
            440   445   450

Glu Asp Val Ala Ser Asn Cys Val Pro Ala Gln Ser Leu Ser Glu
            455   460   465

Pro Ile Leu Trp Ile Val Ser Tyr Ala Leu Met Ser Val Cys Gly
            470   475   480

Ala Ile Leu Leu Val Leu Ile Val Leu Leu Leu Leu Pro Phe Arg
            485   490   495

Cys Gln Arg Arg Pro Arg Asp Pro Glu Val Val Asn Asp Glu Ser
            500   505   510

Ser Leu Val Arg His Arg Trp Lys
            515

<210> 108
<211> 440
<212> PRT
<213> Homo sapien

<400> 108
Met Ala Val Lys Leu Gly Thr Leu Leu Leu Ala Leu Ala Leu Gly
  1   5   10   15

Leu Ala Gln Pro Ala Ser Ala Arg Arg Lys Leu Leu Val Phe Leu
            20   25   30

Leu Asp Gly Phe Arg Ser Asp Tyr Ile Ser Asp Glu Ala Leu Glu
            35   40   45

Ser Leu Pro Gly Phe Lys Glu Ile Val Ser Arg Gly Val Lys Val
            50   55   60

Asp Tyr Leu Thr Pro Asp Phe Pro Ser Leu Ser Tyr Pro Asn Tyr
            65   70   75

Tyr Thr Leu Met Thr Gly Arg His Cys Glu Val His Gln Met Ile
            80   85   90

Gly Asn Tyr Met Trp Asp Pro Thr Thr Asn Lys Ser Phe Asp Ile
            95   100   105

Gly Val Asn Lys Asp Ser Leu Met Pro Leu Trp Trp Asn Gly Ser
            110   115   120

Glu Pro Leu Trp Val Thr Leu Thr Lys Ala Lys Arg Lys Val Tyr
            125   130   135

Met Tyr Tyr Trp Pro Gly Cys Glu Val Glu Ile Leu Gly Val Arg
            140   145   150

196

```
Pro Thr Tyr Cys Leu Glu Tyr Lys Asn Val Pro Thr Asp Ile Asn
              155             160             165

Phe Ala Asn Ala Val Ser Asp Ala Leu Asp Ser Phe Lys Ser Gly
              170             175             180

Arg Ala Asp Leu Ala Ala Ile Tyr His Glu Arg Ile Asp Val Glu
             ·185 ·           190             195

Gly His His Tyr Gly Pro Ala Ser Pro Gln Arg Lys Asp Ala Leu
              200             205             210

Lys Ala Val Asp Thr Val Leu Lys Tyr Met Thr Lys Trp Ile Gln
              215             220             225

Glu Arg Gly Leu Gln Asp Arg Leu Asn Val Ile Ile Phe Ser Asp
              230             235             240

His Gly Met Thr Asp Ile Phe Trp Met Asp Lys Val Ile Glu Leu
              245             250             255

Asn Lys Tyr Ile Ser Leu Asn Asp Leu Gln Gln Val Lys Asp Arg
              260             265             270

Gly Pro Val Val Ser Leu Trp Pro Ala Pro Gly Lys His Ser Glu
              275             280             285

Ile Tyr Asn Lys Leu Ser Thr Val Glu His Met Thr Val Tyr Glu
              290             295             300

Lys Glu Ala Ile Pro Ser Arg Phe Tyr Tyr Lys Lys Gly Lys Phe
              305             310             315

Val Ser Pro Leu Thr Leu Val Ala Asp Glu Gly Trp Phe Ile Thr
              320             325             330

Glu Asn Arg Glu Met Leu Pro Phe Trp Met Asn Ser Thr Gly Arg
              335             340             345

Arg Glu Gly Trp Gln Arg Gly Trp His Gly Tyr Asp Asn Glu Leu
              350             355             360

Met Asp Met Arg Gly Ile Phe Leu Ala Phe Gly Pro Asp Phe Lys
              365             370             375

Ser Asn Phe Arg Ala Ala Pro Ile Arg Ser Val Asp Val Tyr Asn
              380             385             390

Val Met Cys Asn Val Val Gly Ile Thr Pro Leu Pro Asn Asn Gly
              395             400             405

Ser Trp Ser Arg Val Met Cys Met Leu Lys Gly Arg Ala Gly Thr
              410             415             420

Ala Pro Pro Val Trp Pro Ser His Cys Ala Leu Ala Leu Ile Leu
              425             430             435

Leu Phe Leu Leu Ala
```

197

<210> 109
<211> 90
<212> PRT
<213> Homo sapien

<400> 109

```
Met Lys Phe Leu Ala Val Leu Val Leu Leu Gly Val Ser Ile Phe
 1               5                  10                  15

Leu Val Ser Ala Gln Asn Pro Thr Thr Ala Ala Pro Ala Asp Thr
                20                  25                  30

Tyr Pro Ala Thr Gly Pro Ala Asp Asp Glu Ala Pro Asp Ala Glu
                35                  40                  45

Thr Thr Ala Ala Ala Thr Thr Ala Thr Thr Ala Ala Pro Thr Thr
                50                  55                  60

Ala Thr Thr Ala Ala Ser Thr Thr Ala Arg Lys Asp Ile Pro Val
                65                  70                  75

Leu Pro Lys Trp Val Gly Asp Leu Pro Asn Gly Arg Val Cys Pro
                80                  85                  90
```

<210> 110
<211> 256
<212> PRT
<213> Homo sapien

<400> 110

```
Met Phe Gln Thr Gly Gly Leu Ile Val Phe Tyr Gly Leu Leu Ala
 1               5                  10                  15

Gln Thr Met Ala Gln Phe Gly Gly Leu Pro Val Pro Leu Asp Gln
                20                  25                  30

Thr Leu Pro Leu Asn Val Asn Pro Ala Leu Pro Leu Ser Pro Thr
                35                  40                  45

Gly Leu Ala Gly Ser Leu Thr Asn Ala Leu Ser Asn Gly Leu Leu
                50                  55                  60

Ser Gly Gly Leu Leu Gly Ile Leu Glu Asn Leu Pro Leu Leu Asp
                65                  70                  75

Ile Leu Lys Pro Gly Gly Gly Thr Ser Gly Gly Leu Leu Gly Gly
                80                  85                  90

Leu Leu Gly Lys Val Thr Ser Val Ile Pro Gly Leu Asn Asn Ile
                95                  100                 105

Ile Asp Ile Lys Val Thr Asp Pro Gln Leu Leu Glu Leu Gly Leu
                110                 115                 120

Val Gln Ser Pro Asp Gly His Arg Leu Tyr Val Thr Ile Pro Leu
                125                 130                 135
```

```
Gly Ile Lys Leu Gln Val Asn Thr Pro Leu Val Gly Ala Ser Leu
            140                 145                 150

Leu Arg Leu Ala Val Lys Leu Asp Ile Thr Ala Glu Ile Leu Ala
            155                 160                 165

Val Arg Asp Lys Gln Glu Arg Ile His Leu Val Leu Gly Asp Cys
            170                 175                 180

Thr His Ser Pro Gly Ser Leu Gln Ile Ser Leu Leu Asp Gly Leu
            185                 190                 195

Gly Pro Leu Pro Ile Gln Gly Leu Leu Asp Ser Leu Thr Gly Ile
            200                 205                 210

Leu Asn Lys Val Leu Pro Glu Leu Val Gln Gly Asn Val Cys Pro
            215                 220                 225

Leu Val Asn Glu Val Leu Arg Gly Leu Asp Ile Thr Leu Val His
            230                 235                 240

Asp Ile Val Asn Met Leu Ile His Gly Leu Gln Phe Val Ile Lys
            245                 250                 255

Val
```

```
<210> 111
<211> 775
<212> PRT
<213> Homo sapien

<400> 111
Met Glu Pro Pro Tyr Ser Leu Thr Ala His Tyr Asp Glu Phe Gln
  1           5                 10                  15

Glu Val Lys Tyr Val Ser Arg Cys Gly Ala Gly Gly Ala Arg Gly
            20                  25                  30

Ala Ser Leu Pro Pro Gly Phe Pro Leu Gly Ala Ala Arg Ser Val
            35                  40                  45

Thr Gly Ala Arg Ser Gly Leu Pro Arg Trp Asn Arg Arg Glu Val
            50                  55                  60

Cys Leu Leu Ser Gly Leu Val Phe Ala Ala Gly Leu Cys Ala Ile
            65                  70                  75

Leu Ala Ala Met Leu Ala Leu Lys Tyr Leu Gly Pro Val Ala Ala
            80                  85                  90

Gly Gly Gly Ala Cys Pro Glu Gly Cys Pro Glu Arg Lys Ala Phe
            95                  100                 105

Ala Arg Ala Ala Arg Phe Leu Ala Ala Asn Leu Asp Ala Ser Ile
            110                 115                 120

Asp Pro Cys Gln Asp Phe Tyr Ser Phe Ala Cys Gly Gly Trp Leu
```

199

Arg Arg His Ala Ile Pro Asp Asp Lys Leu Thr Tyr Gly Thr Ile
                 140   145   150

Ala Ala Ile Gly Glu Gln Asn Glu Glu Arg Leu Arg Arg Leu Leu
                 155   160   165

Ala Arg Pro Gly Gly Gly Pro Gly Gly Ala Ala Gln Arg Lys Val
                 170   175   180

Arg Ala Phe Phe Arg Ser Cys Leu Asp Met Arg Glu Ile Glu Arg
                 185   190   195

Leu Gly Pro Arg Pro Met Leu Glu Val Ile Glu Asp Cys Gly Gly
                 200   205   210

Trp Asp Leu Gly Gly Ala Glu Glu Arg Pro Gly Val Ala Ala Arg
                 215   220   225

Trp Asp Leu Asn Arg Leu Leu Tyr Lys Ala Gln Gly Val Tyr Ser
                 230   235   240

Ala Ala Ala Leu Phe Ser Leu Thr Val Ser Leu Asp Asp Arg Asn
                 245   250   255

Ser Ser Arg Tyr Val Ile Arg Ile Asp Gln Asp Gly Leu Thr Leu
                 260   265   270

Pro Glu Arg Thr Leu Tyr Leu Ala Gln Asp Glu Asp Ser Glu Lys
                 275   280   285

Ile Leu Ala Ala Tyr Arg Val Phe Met Glu Arg Val Leu Ser Leu
                 290   295   300

Leu Gly Ala Asp Ala Val Glu Gln Lys Ala Gln Glu Ile Leu Gln
                 305   310   315

Val Glu Gln Gln Leu Ala Asn Ile Thr Val Ser Glu Tyr Asp Asp
                 320   325   330

Leu Arg Arg Asp Val Ser Ser Met Tyr Asn Lys Val Thr Leu Gly
                 335   340   345

Gln Leu Gln Lys Ile Thr Pro His Leu Arg Trp Lys Trp Leu Leu
                 350   355   360

Asp Gln Ile Phe Gln Glu Asp Phe Ser Glu Glu Glu Val Val
                 365   370   375

Leu Leu Ala Thr Asp Tyr Met Gln Gln Val Ser Gln Leu Ile Arg
                 380   385   390

Ser Thr Pro His Arg Val Leu His Asn Tyr Leu Val Trp Arg Val
                 395   400   405

Val Val Val Leu Ser Glu His Leu Ser Pro Pro Phe Arg Glu Ala
                 410   415   420

200

```
Leu His Glu Leu Ala Gln Glu Met Glu Gly Ser Asp Lys Pro Gln
              425             430             435

Glu Leu Ala Arg Val Cys Leu Gly Gln Ala Asn Arg His Phe Gly
              440             445             450

Met Ala Leu Gly Ala Leu Phe Val His Glu His Phe Ser Ala Ala
              455             460             465

Ser Lys Ala Lys Val Gln Gln Leu Val Glu Asp Ile Lys Tyr Ile
              470             475             480

Leu Gly Gln Arg Leu Glu Glu Leu Asp Trp Met Asp Ala Glu Thr
              485             490             495

Arg Ala Ala Ala Arg Ala Lys Leu Gln Tyr Met Met Val Met Val
              500             505             510

Gly Tyr Pro Asp Phe Leu Leu Lys Pro Asp Ala Val Asp Lys Glu
              515             520             525

Tyr Glu Phe Glu Val His Glu Lys Thr Tyr Phe Lys Asn Ile Leu
              530             535             540

Asn Ser Ile Pro Phe Ser Ile Gln Leu Ser Val Lys Lys Ile Arg
              545             550             555

Gln Glu Val Asp Lys Ser Thr Trp Leu Leu Pro Pro Gln Ala Leu
              560             565             570

Asn Ala Tyr Tyr Leu Pro Asn Lys Asn Gln Met Val Phe Pro Ala
              575             580             585

Gly Ile Leu Gln Pro Thr Leu Tyr Asp Pro Asp Phe Pro Gln Ser
              590             595             600

Leu Asn Tyr Gly Gly Ile Gly Thr Ile Ile Gly His Glu Leu Thr
              605             610            .615

His Gly Tyr Asp Asp Trp Gly Gly Gln Tyr Asp Arg Ser Gly Asn
              620             625             630

Leu Leu His Trp Trp Thr Glu Ala Ser Tyr Ser Arg Phe Leu Arg
              635             640             645

Lys Ala Glu Cys Ile Val Arg Leu Tyr Asp Asn Phe Thr Val Tyr
              650             655             660

Asn Gln Arg Val Asn Gly Lys His Thr Leu Gly Glu Asn Ile Ala
              665             670             675

Asp Met Gly Val Leu Lys Leu Ala Tyr His Ala Tyr Gln Lys Trp
              680             685             690

Val Arg Glu His Gly Pro Glu His Pro Leu Pro Arg Leu Lys Tyr
              695             700             705

Thr His Asp Gln Leu Phe Phe Ile Ala Phe Ala Gln Asn Trp Cys
```

201

Ile Lys Arg Arg Ser Gln Ser Ile Tyr Leu Gln Val Leu Thr Asp
                725   730   735

Lys His Ala Pro Glu His Tyr Arg Val Leu Gly Ser Val Ser Gln
                740   745   750

Phe Glu Glu Phe Gly Arg Ala Phe His Cys Pro Lys Asp Ser Pro
                755   760   765

Met Asn Pro Ala His Lys Cys Ser Val Trp
                770   775

<210> 112
<211> 529
<212> PRT
<213> Homo sapien

<400> 112
Met Gly Pro Ser Cys Pro Val Phe Leu Ser Phe Thr Lys Leu Ser
  1   5   10   15

Leu Trp Trp Leu Leu Leu Thr Pro Ala Gly Gly Glu Glu Ala Lys
                20   25   30

Arg Pro Pro Pro Arg Ala Pro Gly Asp Pro Leu Ser Ser Pro Ser
                35   40   45

Pro Thr Ala Leu Pro Gln Gly Gly Ser His Thr Glu Thr Glu Asp
                50   55   60

Arg Leu Phe Lys His Leu Phe Arg Gly Tyr Asn Arg Trp Ala Arg
                65   70   75

Pro Val Pro Asn Thr Ser Asp Val Val Ile Val Arg Phe Gly Leu
                80   85   90

Ser Ile Ala Gln Leu Ile Asp Val Asp Glu Lys Asn Gln Met Met
                95   100   105

Thr Thr Asn Val Trp Leu Lys Gln Glu Trp Ser Asp Tyr Lys Leu
                110   115   120

Arg Trp Asn Pro Ala Asp Phe Gly Asn Ile Thr Ser Leu Arg Val
                125   130   135

Pro Ser Glu Met Ile Trp Ile Pro Asp Ile Val Leu Tyr Asn Asn
                140   145   150

Ala Asp Gly Glu Phe Ala Val Thr His Met Thr Lys Ala His Leu
                155   160   165

Phe Ser Thr Gly Thr Val His Trp Val Pro Pro Ala Ile Tyr Lys
                170   175   180

Ser Ser Cys Ser Ile Asp Val Thr Phe Phe Pro Phe Asp Gln Gln
                185   190   195

202

```
Asn Cys Lys Met Lys Phe Gly Ser Trp Thr Tyr Asp Lys Ala Lys
              200             205                 210

Ile Asp Leu Glu Gln Met Glu Gln Thr Val Asp Leu Lys Asp Tyr
              215             220                 225

Trp Glu Ser Gly Glu Trp Ala Ile Val Asn Ala Thr Gly Thr Tyr
              230             235                 240

Asn Ser Lys Lys Tyr Asp Cys Cys Ala Glu Ile Tyr Pro Asp Val
              245             250                 255

Thr Tyr Ala Phe Val Ile Arg Arg Leu Pro Leu Phe Tyr Thr Ile
              260             265                 270

Asn Leu Ile Ile Pro Cys Leu Leu Ile Ser Cys Leu Thr Val Leu
              275             280                 285

Val Phe Tyr Leu Pro Ser Asp Cys Gly Glu Lys Ile Thr Leu Cys
              290             295                 300

Ile Ser Val Leu Leu Ser Leu Thr Val Phe Leu Leu Leu Ile Thr
              305             310                 315

Glu Ile Ile Pro Ser Thr Ser Leu Val Ile Pro Leu Ile Gly Glu
              320             325                 330

Tyr Leu Leu Phe Thr Met Ile Phe Val Thr Leu Ser Ile Val Ile
              335             340                 345

Thr Val Phe Val Leu Asn Val His His Arg Ser Pro Ser Thr His
              350             355                 360

Thr Met Pro His Trp Val Arg Gly Ala Leu Leu Gly Cys Val Pro
              365             370                 375

Arg Trp Leu Leu Met Asn Arg Pro Pro Pro Val Glu Leu Cys
              380             385                 390

His Pro Leu Arg Leu Lys Leu Ser Pro Ser Tyr His Trp Leu Glu
              395             400                 405

Ser Asn Val Asp Ala Glu Glu Arg Glu Val Val Val Glu Glu Glu
              410             415                 420

Asp Arg Trp Ala Cys Ala Gly His Val Ala Pro Ser Val Gly Thr
              425             430                 435

Leu Cys Ser His Gly His Leu His Ser Gly Ala Ser Gly Pro Lys
              440             445                 450

Ala Glu Ala Leu Leu Gln Glu Gly Glu Leu Leu Leu Ser Pro His
              455             460                 465

Met Gln Lys Ala Leu Glu Gly Val His Tyr Ile Ala Asp His Leu
              470             475                 480

Arg Ser Glu Asp Ala Asp Ser Ser Val Lys Glu Asp Trp Lys Tyr
```

```
                    485                    490                    495
    Val Ala Met Val Ile Asp Arg Ile Phe Leu Trp Leu Phe Ile Ile
                        500                    505                    510

    Val Cys Phe Leu Gly Thr Ile Gly Leu Phe Leu Pro Pro Phe Leu
                        515                    520                    525

    Ala Gly Met Ile


<210> 113
<211> 202
<212> PRT
<213> Homo sapien

<400> 113
    Met Leu Pro Pro Gly Thr Ala Thr Leu Leu Thr Leu Leu Leu Ala
     1               5                    10                    15

    Ala Gly Ser Leu Gly Gln Lys Pro Gln Arg Pro Arg Arg Pro Ala
                        20                    25                    30

    Ser Pro Ile Ser Thr Ile Gln Pro Lys Ala Asn Phe Asp Ala Gln
                        35                    40                    45

    Gln Phe Ala Gly Thr Trp Leu Leu Val Ala Val Gly Ser Ala Cys
                        50                    55                    60

    Arg Phe Leu Gln Glu Gln Gly His Arg Ala Glu Ala Thr Thr Leu
                        65                    70                    75

    His Val Ala Pro Gln Gly Thr Ala Met Ala Val Ser Thr Phe Arg
                        80                    85                    90

    Lys Leu Asp Gly Ile Cys Trp Gln Val Arg Gln Leu Tyr Gly Asp
                        95                    100                    105

    Thr Gly Val Leu Gly Arg Phe Leu Leu Gln Ala Arg Gly Ala Arg
                        110                    115                    120

    Gly Ala Val Asn Val Val Val Ala Glu Thr Asp Tyr Gln Ser Phe
                        125                    130                    135

    Ala Val Leu Tyr Leu Glu Arg Ala Gly Gln Leu Ser Val Lys Leu
                        140                    145                    150

    Tyr Ala Arg Ser Leu Pro Val Ser Asp Ser Val Leu Ser Gly Phe
                        155                    160                    165

    Glu Gln Arg Val Gln Glu Ala His Leu Thr Glu Asp Gln Ile Phe
                        170                    175                    180

    Tyr Phe Pro Lys Tyr Gly Phe Cys Glu Ala Ala Asp Gln Phe His
                        185                    190                    195

    Val Leu Asp Glu Val Arg Arg
                        200
```

204

<210> 114
<211> 267
<212> PRT
<213> Homo sapien

<400> 114
```
Met Arg Leu Thr Val Leu Cys Ala Val Cys Leu Leu Pro Gly Ser
  1               5                  10                  15

Leu Ala Leu Pro Leu Pro Gln Glu Ala Gly Gly Met Ser Glu Leu
                 20                  25                  30

Gln Trp Glu Gln Ala Gln Asp Tyr Leu Lys Arg Phe Tyr Leu Tyr
                 35                  40                  45

Asp Ser Glu Thr Lys Asn Ala Asn Ser Leu Glu Ala Lys Leu Lys
                 50                  55                  60

Glu Met Gln Lys Phe Phe Gly Leu Pro Ile Thr Gly Met Leu Asn
                 65                  70                  75

Ser Arg Val Ile Glu Ile Met Gln Lys Pro Arg Cys Gly Val Pro
                 80                  85                  90

Asp Val Ala Glu Tyr Ser Leu Phe Pro Asn Ser Pro Lys Trp Thr
                 95                 100                 105

Ser Lys Val Val Thr Tyr Arg Ile Val Ser Tyr Thr Arg Asp Leu
                110                 115                 120

Pro His Ile Thr Val Asp Arg Leu Val Ser Lys Ala Leu Asn Met
                125                 130                 135

Trp Gly Lys Glu Ile Pro Leu His Phe Arg Lys Val Val Trp Gly
                140                 145                 150

Thr Ala Asp Ile Met Ile Gly Phe Ala Arg Gly Ala His Gly Asp
                155                 160                 165

Ser Tyr Pro Phe Asp Gly Pro Gly Asn Thr Leu Ala His Ala Phe
                170                 175                 180

Ala Pro Gly Thr Gly Leu Gly Gly Asp Ala His Phe Asp Glu Asp
                185                 190                 195

Glu Arg Trp Thr Asp Gly Ser Ser Leu Gly Ile Asn Phe Leu Tyr
                200                 205                 210

Ala Ala Thr His Glu Leu Gly His Ser Leu Gly Met Gly His Ser
                215                 220                 225

Ser Asp Pro Asn Ala Val Met Tyr Pro Thr Tyr Gly Asn Gly Asp
                230                 235                 240

Pro Gln Asn Phe Lys Leu Ser Gln Asp Asp Ile Lys Gly Ile Gln
                245                 250                 255

Lys Leu Tyr Gly Lys Arg Ser Asn Ser Arg Lys Lys
```

205

<210> 115
<211> 314
<212> PRT
<213> Homo sapien

<400> 115
```
Met Ala Pro Pro Gln Val Leu Ala Phe Gly Leu Leu Leu Ala Ala
 1               5                  10                  15

Ala Thr Ala Thr Phe Ala Ala Ala Gln Glu Glu Cys Val Cys Glu
                20                  25                  30

Asn Tyr Lys Leu Ala Val Asn Cys Phe Val Asn Asn Asn Arg Gln
                35                  40                  45

Cys Gln Cys Thr Ser Val Gly Ala Gln Asn Thr Val Ile Cys Ser
                50                  55                  60

Lys Leu Ala Ala Lys Cys Leu Val Met Lys Ala Glu Met Asn Gly
                65                  70                  75

Ser Lys Leu Gly Arg Arg Ala Lys Pro Glu Gly Ala Leu Gln Asn
                80                  85                  90

Asn Asp Gly Leu Tyr Asp Pro Asp Cys Asp Glu Ser Gly Leu Phe
                95                  100                 105

Lys Ala Lys Gln Cys Asn Gly Thr Ser Thr Cys Trp Cys Val Asn
                110                 115                 120

Thr Ala Gly Val Arg Arg Thr Asp Lys Asp Thr Glu Ile Thr Cys
                125                 130                 135

Ser Glu Arg Val Arg Thr Tyr Trp Ile Ile Ile Glu Leu Lys His
                140                 145                 150

Lys Ala Arg Glu Lys Pro Tyr Asp Ser Lys Ser Leu Arg Thr Ala
                155                 160                 165

Leu Gln Lys Glu Ile Thr Thr Arg Tyr Gln Leu Asp Pro Lys Phe
                170                 175                 180

Ile Thr Ser Ile Leu Tyr Glu Asn Asn Val Ile Thr Ile Asp Leu
                185                 190                 195

Val Gln Asn Ser Ser Gln Lys Thr Gln Asn Asp Val Asp Ile Ala
                200                 205                 210

Asp Val Ala Tyr Tyr Phe Glu Lys Asp Val Lys Gly Glu Ser Leu
                215                 220                 225

Phe His Ser Lys Lys Met Asp Leu Thr Val Asn Gly Glu Gln Leu
                230                 235                 240

Asp Leu Asp Pro Gly Gln Thr Leu Ile Tyr Tyr Val Asp Glu Lys
                245                 250                 255
```

Ala Pro Glu Phe Ser Met Gln Gly Leu Lys Ala Gly Val Ile Ala
                260   265   270

Val Ile Val Val Val Val Met Ala Val Val Ala Gly Ile Val Val
                275   280   285

Leu Val Ile Ser Arg Lys Lys Arg Met Ala Lys Tyr Glu Lys Ala
                290   295   300

Glu Ile Lys Glu Met Gly Glu Met His Arg Glu Leu Asn Ala
                305   310

<210> 116
<211> 130
<212> PRT
<213> Homo sapien

<400> 116
 Met Arg Gln Lys Ala Val Ser Val Phe Leu Cys Tyr Leu Leu Leu
   1   5   10   15

 Phe Thr Cys Ser Gly Val Glu Ala Gly Lys Lys Lys Cys Ser Glu
               20   25   30

 Ser Ser Asp Ser Gly Ser Gly Phe Trp Lys Ala Leu Thr Phe Met
               35   40   45

 Ala Val Gly Gly Gly Leu Ala Val Ala Gly Leu Pro Ala Leu Gly
               50   55   60

 Phe Thr Gly Ala Gly Ile Ala Ala Asn Ser Val Ala Ala Ser Leu
               65   70   75

 Met Ser Trp Ser Ala Ile Leu Asn Gly Gly Gly Val Pro Ala Gly
               80   85   90

 Gly Leu Val Ala Thr Leu Gln Ser Leu Gly Ala Gly Gly Ser Ser
               95   100   105

 Val Val Ile Gly Asn Ile Gly Ala Leu Met Arg Tyr Ala Thr His
               110   115   120

 Lys Tyr Leu Asp Ser Glu Glu Asp Glu Glu
               125   130

<210> 117
<211> 799
<212> PRT
<213> Homo sapien

<400> 117
 Met Pro Arg Ala Pro Ala Pro Leu Tyr Ala Cys Leu Leu Gly Leu
   1   5   10   15

 Cys Ala Leu Leu Pro Arg Leu Ala Gly Leu Asn Ile Cys Thr Ser
               20   25   30

 Gly Ser Ala Thr Ser Cys Glu Glu Cys Leu Leu Ile His Pro Lys

Cys Ala Trp Cys Ser Lys Glu Asp Phe Gly Ser Pro Arg Ser Ile
     50   55   60

Thr Ser Arg Cys Asp Leu Arg Ala Asn Leu Val Lys Asn Gly Cys
     65   70   75

Gly Gly Glu Ile Glu Ser Pro Ala Ser Ser Phe His Val Leu Arg
     80   85   90

Ser Leu Pro Leu Ser Ser Lys Gly Ser Gly Ser Ala Gly Trp Asp
     95   100   105

Val Ile Gln Met Thr Pro Gln Glu Ile Ala Val Asn Leu Arg Pro
     110   115   120

Gly Asp Lys Thr Thr Phe Gln Leu Gln Val Arg Gln Val Glu Asp
     125   130   135

Tyr Pro Val Asp Leu Tyr Tyr Leu Met Asp Leu Ser Leu Ser Met
     140   145   150

Lys Asp Asp Leu Asp Asn Ile Arg Ser Leu Gly Thr Lys Leu Ala
     155   160   165

Glu Glu Met Arg Lys Leu Thr Ser Asn Phe Arg Leu Gly Phe Gly
     170   175   180

Ser Phe Val Asp Lys Asp Ile Ser Pro Phe Ser Tyr Thr Ala Pro
     185   190   195

Arg Tyr Gln Thr Asn Pro Cys Ile Gly Tyr Lys Leu Phe Pro Asn
     200   205   210

Cys Val Pro Ser Phe Gly Phe Arg His Leu Leu Pro Leu Thr Asp
     215   220   225

Arg Val Asp Ser Phe Asn Glu Glu Val Arg Lys Gln Arg Val Ser
     230   235   240

Arg Asn Arg Asp Ala Pro Glu Gly Gly Phe Asp Ala Val Leu Gln
     245   250   255

Ala Ala Val Cys Lys Glu Lys Ile Gly Trp Arg Lys Asp Ala Leu
     260   265   270

His Leu Leu Val Phe Thr Thr Asp Asp Val Pro His Ile Ala Leu
     275   280   285

Asp Gly Lys Leu Gly Gly Leu Val Gln Pro His Asp Gly Gln Cys
     290   295   300

His Leu Asn Glu Ala Asn Glu Tyr Thr Ala Ser Asn Gln Met Asp
     305   310   315

Tyr Pro Ser Leu Ala Leu Leu Gly Glu Lys Leu Ala Glu Asn Asn
     320   325   330

```
Ile Asn Leu Ile Phe Ala Val Thr Lys Asn His Tyr Met Leu Tyr
            335             340                 345

Lys Asn Phe Thr Ala Leu Ile Pro Gly Thr Thr Val Glu Ile Leu
            350             355                 360

Asp Gly Asp Ser Lys Asn Ile Ile Gln Leu Ile Ile Asn Ala Tyr
            365             370                 375

Asn Ser Ile Arg Ser Lys Val Glu Leu Ser Val Trp Asp Gln Pro
            380             385                 390

Glu Asp Leu Asn Leu Phe Phe Thr Ala Thr Cys Gln Asp Gly Val
            395             400                 405

Ser Tyr Pro Gly Gln Arg Lys Cys Glu Gly Leu Lys Ile Gly Asp
            410             415                 420

Thr Ala Ser Phe Glu Val Ser Leu Glu Ala Arg Ser Cys Pro Ser
            425             430                 435

Arg His Thr Glu His Val Phe Ala Leu Arg Pro Val Gly Phe Arg
            440             445                 450

Asp Ser Leu Glu Val Gly Val Thr Tyr Asn Cys Thr Cys Gly Cys
            455             460                 465

Ser Val Gly Leu Glu Pro Asn Ser Ala Arg Cys Asn Gly Ser Gly
            470             475                 480

Thr Tyr Val Cys Gly Leu Cys Glu Cys Ser Pro Gly Tyr Leu Gly
            485             490                 495

Thr Arg Cys Glu Cys Gln Asp Gly Glu Asn Gln Ser Val Tyr Gln
            500             505                 510

Asn Leu Cys Arg Glu Ala Glu Gly Lys Pro Leu Cys Ser Gly Arg
            515             520                 525

Gly Asp Cys Ser Cys Asn Gln Cys Ser Cys Phe Glu Ser Glu Phe
            530             535                 540

Gly Lys Ile Tyr Gly Pro Phe Cys Glu Cys Asp Asn Phe Ser Cys
            545             550                 555

Ala Arg Asn Lys Gly Val Leu Cys Ser Gly His Gly Glu Cys His
            560             565                 570

Cys Gly Glu Cys Lys Cys His Ala Gly Tyr Ile Gly Asp Asn Cys
            575             580                 585

Asn Cys Ser Thr Asp Ile Ser Thr Cys Arg Gly Arg Asp Gly Gln
            590             595                 600

Ile Cys Ser Glu Arg Gly His Cys Leu Cys Gly Gln Cys Gln Cys
            605             610                 615

Thr Glu Pro Gly Ala Phe Gly Glu Met Cys Glu Lys Cys Pro Thr
```

Cys Pro Asp Ala Cys Ser Thr Lys Arg Asp Cys Val Glu Cys Leu
              635   640   645

Leu Leu His Ser Gly Lys Pro Asp Asn Gln Thr Cys His Ser Leu
              650   655   660

Cys Arg Asp Glu Val Ile Thr Trp Val Asp Thr Ile Val Lys Asp
              665   670   675

Asp Gln Glu Ala Val Leu Cys Phe Tyr Lys Thr Ala Lys Asp Cys
              680   685·   690

Val Met Met Phe Thr Tyr Val Glu Leu Pro Ser Gly Lys Ser Asn
              695   700·   705

Leu Thr Val Leu Arg Glu Pro Glu Cys Gly Asn Thr Pro Asn Ala
              710   715   720

Met Thr Ile Leu Leu Ala Val Val Gly Ser Ile Leu Leu Val Gly
              725   730   735

Leu Ala Leu Leu Ala Ile Trp Lys Leu Leu Val Thr Ile His Asp
              740   745   750

Arg Arg Glu Phe Ala Lys Phe Gln Ser Glu Arg Ser Arg Ala Arg
              755   760   765

Tyr Glu Met Ala Ser Asn Pro Leu Tyr Arg Lys Pro Ile Ser Thr
              770   775   780

His Thr Val Asp Phe Thr Phe Asn Lys Phe Asn Lys Ser Tyr Asn
              785   790   795

Gly Thr Val Asp

<210> 118
<211> 680
<212> PRT
<213> Homo sapien

<400> 118
  Met Leu Pro Gln Ile Pro Phe Leu Leu Leu Val Ser Leu Asn Leu
    1   5   10   15

  Val His Gly Val Phe Tyr Ala Glu Arg Tyr Gln Met Pro Thr Gly
                 20   25   30

  Ile Lys Gly Pro Leu Pro Asn Thr Lys Thr Gln Phe Phe Ile Pro
                 35   40   45

  Tyr Thr Ile Lys Ser Lys Gly Ile Ala Val Arg Gly Glu Gln Gly
                 50   55   60

  Thr Pro Gly Pro Pro Gly Pro Ala Gly Pro Arg Gly His Pro Gly
                 65   70   75

```
Pro Ser Gly Pro Pro Gly Lys Pro Gly Tyr Gly Ser Pro Gly Leu
            80              85                    90

Gln Gly Glu Pro Gly Leu Pro Gly Pro Pro Gly Pro Ser Ala Val
            95              100                   105

Gly Lys Pro Gly Val Pro Gly Leu Pro Gly Lys Pro Gly Glu Arg
            110             115                   120

Gly Pro Tyr Gly Pro Lys Gly Asp Val Gly Pro Ala Gly Leu Pro
            125             130                   135

Gly Pro Arg Gly Pro Pro Gly Pro Gly Ile Pro Gly Pro Ala
            140             145                   150

Gly Ile Ser Val Pro Gly Lys Pro Gly Gln Gln Gly Pro Thr Gly
            155             160                   165

Ala Pro Gly Pro Arg Gly Phe Pro Gly Glu Lys Gly Ala Pro Gly
            170             175                   180

Val Pro Gly Met Asn Gly Gln Lys Gly Glu Met Gly Tyr Gly Ala
            185             190                   195

Pro Gly Arg Pro Gly Glu Arg Gly Leu Pro Gly Pro Gln Gly Pro
            200             205                   210

Thr Gly Pro Ser Gly Pro Pro Gly Val Gly Lys Arg Gly Glu Asn
            215             220                   225

Gly Val Pro Gly Gln Pro Gly Ile Lys Gly Asp Arg Gly Phe Pro
            230             235                   240

Gly Glu Met Gly Pro Ile Gly Pro Pro Gly Pro Gln Gly Pro Pro
            245             250                   255

Gly Glu Arg Gly Pro Glu Gly Ile Gly Lys Pro Gly Ala Ala Gly
            260             265                   270

Ala Pro Gly Gln Pro Gly Ile Pro Gly Thr Lys Gly Leu Pro Gly
            275             280                   285

Ala Pro Gly Ile Ala Gly Pro Pro Gly Pro Pro Gly Phe Gly Lys
            290             295                   300

Pro Gly Leu Pro Gly Leu Lys Gly Glu Arg Gly Pro Ala Gly Leu
            305             310                   315

Pro Gly Gly Pro Gly Ala Lys Gly Glu Gln Gly Pro Ala Gly Leu
            320             325                   330

Pro Gly Lys Pro Gly Leu Thr Gly Pro Pro Gly Asn Met Gly Pro
            335             340                   345

Gln Gly Pro Lys Gly Ile Pro Gly Ser His Gly Leu Pro Gly Pro
            350             355                   360

Lys Gly Glu Thr Gly Pro Ala Gly Pro Ala Gly Tyr Pro Gly Ala
```

Lys Gly Glu Arg Gly Ser Pro Gly Ser Asp Gly Lys Pro Gly Tyr
              380   385   390

Pro Gly Lys Pro Gly Leu Asp Gly Pro Lys Gly Asn Pro Gly Leu
              395   400   405

Pro Gly Pro Lys Gly Asp Pro Gly Val Gly Gly Pro Pro Gly Leu
              410   415   420

Pro Gly Pro Val Gly Pro Ala Gly Ala Lys Gly Met Pro Gly His
              425   430   435

Asn Gly Glu Ala Gly Pro Arg Gly Ala Pro Gly Ile Pro Gly Thr
              440   445   450

Arg Gly Pro Ile Gly Pro Pro Gly Ile Pro Gly Phe Pro Gly Ser
              455   460   465

Lys Gly Asp Pro Gly Ser Pro Gly Pro Pro Gly Pro Ala Gly Ile
              470   475   480

Ala Thr Lys Gly Leu Asn Gly Pro Thr Gly Pro Pro Gly Pro Pro
              485   490   495

Gly Pro Arg Gly His Ser Gly Glu Pro Gly Leu Pro Gly Pro Pro
              500   505   510

Gly Pro Pro Gly Pro Pro Gly Gln Ala Val Met Pro Glu Gly Phe
              515   520   525

Ile Lys Ala Gly Gln Arg Pro Ser Leu Ser Gly Thr Pro Leu Val
              530   535   540

Ser Ala Asn Gln Gly Val Thr Gly Met Pro Val Ser Ala Phe Thr
              545   550   555

Val Ile Leu Ser Lys Ala Tyr Pro Ala Ile Gly Thr Pro Ile Pro
              560   565   570

Phe Asp Lys Ile Leu Tyr Asn Arg Gln Gln His Tyr Asp Pro Arg
              575   580   585

Thr Gly Ile Phe Thr Cys Gln Ile Pro Gly Ile Tyr Tyr Phe Ser
              590   595   600

Tyr His Val His Val Lys Gly Thr His Val Trp Val Gly Leu Tyr
              605   610   615

Lys Asn Gly Thr Pro Val Met Tyr Thr Tyr Asp Glu Tyr Thr Lys
              620   625   630

Gly Tyr Leu Asp Gln Ala Ser Gly Ser Ala Ile Ile Asp Leu Thr
              635   640   645

Glu Asn Asp Gln Val Trp Leu Gln Leu Pro Asn Ala Glu Ser Asn
              650   655   660

212

```
Gly Leu Tyr Ser Ser Glu Tyr Val His Ser Ser Phe Ser Gly Phe
              665                 670                 675

Leu Val Ala Pro Met
              680
```

<210> 119
<211> 508
<212> PRT
<213> Homo sapien

<400> 119

```
Met Leu Leu Trp Ser Leu Leu Val Ile Phe Asp Ala Val Thr Glu
  1              5                 10                 15

Gln Ala Asp Ser Leu Thr Leu Val Ala Pro Ser Ser Val Phe Glu
             20                 25                 30

Gly Asp Ser Ile Val Leu Lys Cys Gln Gly Glu Gln Asn Trp Lys
             35                 40                 45

Ile Gln Lys Met Ala Tyr His Lys Asp Asn Lys Glu Leu Ser Val
             50                 55                 60

Phe Lys Lys Phe Ser Asp Phe Leu Ile Gln Ser Ala Val Leu Ser
             65                 70                 75

Asp Ser Gly Asn Tyr Phe Cys Ser Thr Lys Gly Gln Leu Phe Leu
             80                 85                 90

Trp Asp Lys Thr Ser Asn Ile Val Lys Ile Lys Val Gln Glu Leu
             95                100                105

Phe Gln Arg Pro Val Leu Thr Ala Ser Ser Phe Gln Pro Ile Glu
            110                115                120

Gly Gly Pro Val Ser Leu Lys Cys Glu Thr Arg Leu Ser Pro Gln
            125                130                135

Arg Leu Asp Val Gln Leu Gln Phe Cys Phe Phe Arg Glu Asn Gln
            140                145                150

Val Leu Gly Ser Gly Trp Ser Ser Ser Pro Glu Leu Gln Ile Ser
            155                160                165

Ala Val Trp Ser Glu Asp Thr Gly Ser Tyr Trp Cys Lys Ala Glu
            170                175                180

Thr Val Thr His Arg Ile Arg Lys Gln Ser Leu Gln Ser Gln Ile
            185                190                195

His Val Gln Arg Ile Pro Ile Ser Asn Val Ser Leu Glu Ile Arg
            200                205                210

Ala Pro Gly Gly Gln Val Thr Glu Gly Gln Lys Leu Ile Leu Leu
            215                220                225

Cys Ser Val Ala Gly Gly Thr Gly Asn Val Thr Phe Ser Trp Tyr
```

213

Arg Glu Ala Thr Gly Thr Ser Met Gly Lys Lys Thr Gln Arg Ser
              245   250   255

Leu Ser Ala Glu Leu Glu Ile Pro Ala Val Lys Glu Ser Asp Ala
              260   265   270

Gly Lys Tyr Tyr Cys Arg Ala Asp Asn Gly His Val Pro Ile Gln
              275   280   285

Ser Lys Val Val Asn Ile Pro Val Arg Ile Pro Val Ser Arg Pro
              290   295   300

Val Leu Thr Leu Arg Ser Pro Gly Ala Gln Ala Ala Val Gly Asp
              305   310   315

Leu Leu Glu Leu His Cys Glu Ala Leu Arg Gly Ser Pro Pro Ile
              320   325   330

Leu Tyr Gln Phe Tyr His Glu Asp Val Thr Leu Gly Asn Ser Ser
              335   340   345

Ala Pro Ser Gly Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Ala
              350   355   360

Glu His Ser Gly Asn Tyr Ser Cys Glu Ala Asn Asn Gly Leu Gly
              365   370   375

Ala Gln Cys Ser Glu Ala Val Pro Val Ser Ile Ser Gly Pro Asp
              380   385   390

Gly Tyr Arg Arg Asp Leu Met Thr Ala Gly Val Leu Trp Gly Leu
              395   400   405

Phe Gly Val Leu Gly Phe Thr Gly Val Ala Leu Leu Leu Tyr Ala
              410   415   420

Leu Phe His Lys Ile Ser Gly Glu Ser Ser Ala Thr Asn Glu Pro
              425   430   435

Arg Gly Ala Ser Arg Pro Asn Pro Gln Glu Phe Thr Tyr Ser Ser
              440   445   450

Pro Thr Pro Asp Met Glu Glu Leu Gln Pro Val Tyr Val Asn Val
              455   460   465

Gly Ser Val Asp Val Asp Val Val Tyr Ser Gln Val Trp Ser Met
              470   475   480

Gln Gln Pro Glu Ser Ser Ala Asn Ile Arg Thr Leu Leu Glu Asn
              485   490   495

Lys Asp Ser Gln Val Ile Tyr Ser Ser Val Lys Lys Ser
              500   505

<210> 120
<211> 386

214

<212> PRT
<213> Homo sapien

<400> 120
```
Leu Arg Gln Gly Leu Ser Gly Gly Gly Ser Leu Ala Ser Gly
 1               5                   10                  15

Gly Pro Gly Pro Gly His Ala Ser Leu Ser Gln Arg Leu Arg Leu
                20              25                  30

Tyr Leu Ala Asp Ser Trp Asn Gln Cys Asp Leu Val Ala Leu Thr
                35              40                  45

Cys Phe Leu Leu Gly Val Gly Cys Arg Leu Thr Pro Gly Leu Tyr
                50              55                  60

His Leu Gly Arg Thr Val Leu Cys Ile Asp Phe Met Val Phe Thr
                65              70                  75

Val Arg Leu Leu His Ile Phe Thr Val Asn Lys Gln Leu Gly Pro
                80              85                  90

Lys Ile Val Ile Val Ser Lys Met Met Lys Asp Val Phe Phe Phe
                95              100                 105

Leu Phe Phe Leu Gly Val Trp Leu Val Ala Tyr Gly Val Ala Thr
                110             115                 120

Glu Gly Leu Leu Arg Pro Arg Asp Ser Asp Phe Pro Ser Ile Leu
                125             130                 135

Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln Ile Phe Gly Gln Ile
                140             145                 150

Pro Gln Glu Asp Met Asp Val Ala Leu Met Glu His Ser Asn Cys
                155             160                 165

Ser Ser Glu Pro Gly Phe Trp Ala His Pro Pro Gly Ala Gln Ala
                170             175                 180

Gly Thr Cys Val Ser Gln Tyr Ala Asn Trp Leu Val Val Leu Leu
                185             190                 195

Leu Val Ile Phe Leu Leu Val Ala Asn Ile Leu Leu Val Asn Leu
                200             205                 210

Leu Ile Ala Met Phe Ser Tyr Thr Phe Gly Lys Val Gln Gly Asn
                215             220                 225

Ser Asp Leu Tyr Trp Lys Ala Gln Arg Tyr Arg Leu Ile Arg Glu
                230             235                 240

Phe His Ser Arg Pro Ala Leu Ala Pro Pro Phe Ile Val Ile Ser
                245             250                 255

His Leu Arg Leu Leu Leu Arg Gln Leu Cys Arg Arg Pro Arg Ser
                260             265                 270
```

```
Pro Gln Pro Ser Ser Pro Ala Leu Glu His Phe Arg Val Tyr Leu
                275             280             285

Ser Lys Glu Ala Glu Arg Lys Leu Leu Thr Trp Glu Ser Val His
                290             295             300

Lys Glu Asn Phe Leu Leu Ala Arg Ala Arg Asp Lys Arg Glu Ser
                305             310             315

Asp Ser Glu Arg Leu Lys Arg Thr Ser Gln Lys Val Asp Leu Ala
                320             325             330

Leu Lys Gln Leu Gly His Ile Arg Glu Tyr Glu Gln Arg Leu Lys
                335             340             345

Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg Val Leu Gly Trp
                350             355             360

Val Ala Glu Ala Leu Ser Arg Ser Ala Leu Leu Pro Pro Gly Gly
                365             370             375

Pro Pro Pro Pro Asp Leu Pro Gly Ser Lys Asp
                380             385
```

<210> 121
<211> 529
<212> PRT
<213> Homo sapien

<400> 121
```
Met Gly Pro Ser Cys Pro Val Phe Leu Ser Phe Thr Lys Leu Ser
  1             5               10              15

Leu Trp Trp Leu Leu Leu Thr Pro Ala Gly Gly Glu Glu Ala Lys
                20              25              30

Arg Pro Pro Pro Arg Ala Pro Gly Asp Pro Leu Ser Ser Pro Ser
                35              40              45

Pro Thr Ala Leu Pro Gln Gly Gly Ser His Thr Glu Thr Glu Asp
                50              55              60

Arg Leu Phe Lys His Leu Phe Arg Gly Tyr Asn Arg Trp Ala Arg
                65              70              75

Pro Val Pro Asn Thr Ser Asp Val Val Ile Val Arg Phe Gly Leu
                80              85              90

Ser Ile Ala Gln Leu Ile Asp Val Asp Glu Lys Asn Gln Met Met
                95              100             105

Thr Thr Asn Val Trp Leu Lys Gln Glu Trp Ser Asp Tyr Lys Leu
                110             115             120

Arg Trp Asn Pro Ala Asp Phe Gly Asn Ile Thr Ser Leu Arg Val
                125             130             135

Pro Ser Glu Met Ile Trp Ile Pro Asp Ile Val Leu Tyr Asn Asn
```

216

```
              140                    145                    150

Ala Asp Gly Glu Phe Ala Val Thr His Met Thr Lys Ala His Leu
              155                    160                    165

Phe Ser Thr Gly Thr Val His Trp Val Pro Pro Ala Ile Tyr Lys
              170                    175                    180

Ser Ser Cys Ser Ile Asp Val Thr Phe Phe Pro Phe Asp Gln Gln
              185                    190                    195

Asn Cys Lys Met Lys Phe Gly Ser Trp Thr Tyr Asp Lys Ala Lys
              200                    205                    210

Ile Asp Leu Glu Gln Met Glu Gln Thr Val Asp Leu Lys Asp Tyr
              215                    220                    225

Trp Glu Ser Gly Glu Trp Ala Ile Val Asn Ala Thr Gly Thr Tyr
              230                    235                    240

Asn Ser Lys Lys Tyr Asp Cys Cys Ala Glu Ile Tyr Pro Asp Val
              245                    250                    255

Thr Tyr Ala Phe Val Ile Arg Arg Leu Pro Leu Phe Tyr Thr Ile
              260                    265                    270

Asn Leu Ile Ile Pro Cys Leu Leu Ile Ser Cys Leu Thr Val Leu
              275                    280                    285

Val Phe Tyr Leu Pro Ser Asp Cys Gly Glu Lys Ile Thr Leu Cys
              290                    295                    300

Ile Ser Val Leu Leu Ser Leu Thr Val Phe Leu Leu Leu Ile Thr
              305                    310                    315

Glu Ile Ile Pro Ser Thr Ser Leu Val Ile Pro Leu Ile Gly Glu
              320                    325                    330

Tyr Leu Leu Phe Thr Met Ile Phe Val Thr Leu Ser Ile Val Ile
              335                    340                    345

Thr Val Phe Val Leu Asn Val His His Arg Ser Pro Ser Thr His
              350                    355                    360

Thr Met Pro His Trp Val Arg Gly Ala Leu Leu Gly Cys Val Pro
              365                    370                    375

Arg Trp Leu Leu Met Asn Arg Pro Pro Pro Val Glu Leu Cys
              380                    385                    390

His Pro Leu Arg Leu Lys Leu Ser Pro Ser Tyr His Trp Leu Glu
              395                    400                    405

Ser Asn Val Asp Ala Glu Glu Arg Glu Val Val Val Glu Glu Glu
              410                    415                    420

Asp Arg Trp Ala Cys Ala Gly His Val Ala Pro Ser Val Gly Thr
              425                    430                    435


                             217
```

```
Leu Cys Ser His Gly His Leu His Ser Gly Ala Ser Gly Pro Lys
            440               445   .           450

Ala Glu Ala Leu Leu Gln Glu Gly Glu Leu Leu Leu Ser Pro His
            455               460               ·465

Met Gln Lys Ala Leu Glu Gly Val His Tyr Ile Ala Asp His Leu
            470               475               480

Arg Ser Glu Asp Ala Asp Ser Ser Val Lys Glu Asp Trp Lys Tyr
            485               490               495

Val Ala Met Val Ile Asp Arg Ile Phe Leu Trp Leu Phe Ile Ile
       .    500               505               510

Val Cys Phe Leu Gly Thr Ile Gly Leu Phe Leu Pro Pro Phe Leu
            515               520   .           525

Ala Gly Met Ile


<210> 122
<211> 339
<212> PRT
<213> Homo sapien

<400> 122
 Met Glu Ser Arg Lys Asp Ile Thr Asn Gln Glu Glu Leu Trp Lys
   1   ·    .         5             .   10               15

 Met Lys Pro Arg Arg Asn Leu Glu Glu Asp Asp Tyr Leu His Lys
            20               25               30

 Asp Thr Gly Glu Thr Ser Met Leu Lys Arg Pro Val Leu Leu His
            35               40               .   45   . .

 Leu His Gln Thr Ala His Ala Asp Glu Phe Asp Cys Pro Ser Glu
            50               55               60

 Leu Gln His Thr Gln Glu Leu Phe Pro Gln Trp His Leu Pro Ile
            65               70               75

 Lys Ile Ala Ala Ile Ile Ala Ser Leu Thr Phe Leu Tyr Thr Leu
            80               85               90

 Leu Arg Glu Val Ile His Pro Leu Ala Thr Ser His Gln Gln Tyr
            95               ·100             105

 Phe Tyr Lys Ile Pro Ile Leu Val Ile Asn Lys Val Leu Pro Met
            110              ·   115             120

 Val Ser Ile Thr Leu Leu Ala Leu Val Tyr Leu Pro Gly Val Ile
            125              130              135

 Ala Ala Ile Val Gln Leu His Asn Gly Thr Lys Tyr Lys Lys Phe
            140              145              150

 Pro His Trp Leu Asp Lys Trp Met Leu Thr Arg Lys Gln Phe Gly
```

218

Leu Leu Ser Phe Phe Phe Ala Val Leu His Ala Ile Tyr Ser Leu
            170   175   180

Ser Tyr Pro Met Arg Arg Ser Tyr Arg Tyr Lys Leu Leu Asn Trp
            185   190   195

Ala Tyr Gln Gln Val Gln Gln Asn Lys Glu Asp Ala Trp Ile Glu
            200   205   210

His Asp Val Trp Arg Met Glu Ile Tyr Val Ser Leu Gly Ile Val
            215   220   225

Gly Leu Ala Ile Leu Ala Leu Leu Ala Val Thr Ser Ile Pro Ser
            230   235   240

Val Ser Asp Ser Leu Thr Trp Arg Glu Phe His Tyr Ile Gln Ser
            245   250   255

Lys Leu Gly Ile Val Ser Leu Leu Leu Gly Thr Ile His Ala Leu
            260   265   270

Ile Phe Ala Trp Asn Lys Trp Ile Asp Ile Lys Gln Phe Val Trp
            275   280   285

Tyr Thr Pro Pro Thr Phe Met Ile Ala Val Phe Leu Pro Ile Val
            290   295   300

Val Leu Ile Phe Lys Ser Ile Leu Phe Leu Pro Cys Leu Arg Lys
            305   310   315

Lys Ile Leu Lys Ile Arg His Gly Trp Glu Asp Val Thr Lys Ile
            320   325   330

Asn Lys Thr Glu Ile Cys Ser Gln Leu
            335

<210> 123
<211> 1127
<212> PRT
<213> Homo sapien

<400> 123
Met His Asn Thr Thr Glu Lys Pro Thr Asp Ala Tyr Gly Glu Leu
  1   5   10   15

Asp Phe Thr Gly Ala Gly Arg Lys His Ser Asn Phe Leu Arg Leu
            20   25   30

Ser Asp Arg Thr Asp Pro Ala Ala Val Tyr Ser Leu Val Thr Arg
            35   40   45

Thr Trp Gly Phe Arg Ala Pro Asn Leu Val Val Ser Val Leu Gly
            50   55   60

Gly Ser Gly Gly Pro Val Leu Gln Thr Trp Leu Gln Asp Leu Leu
            65   70   75

219

```
Arg Arg Gly Leu Val Arg Ala Ala Gln Ser Thr Gly Ala Trp Ile
              80                  85                      90

Val Thr Gly Gly Leu His Thr Gly Ile Gly Arg His Val Gly Val
              95                 100                     105

Ala Val Arg Asp His Gln Met Ala Ser Thr Gly Gly Thr Lys Val
             110                 115                     120

Val Ala Met Gly Val Ala Pro Trp Gly Val Val Arg Asn Arg Asp
             125                 130                     135

Thr Leu Ile Asn Pro Lys Gly Ser Phe Pro Ala Arg Tyr Arg Trp
             140                 145                     150

Arg Gly Asp Pro Glu Asp Gly Val Gln Phe Pro Leu Asp Tyr Asn
             155                 160                     165

Tyr Ser Ala Phe Phe Leu Val Asp Asp Gly Thr His Gly Cys Leu
             170                 175                     180

Gly Gly Glu Asn Arg Phe Arg Leu Arg Leu Glu Ser Tyr Ile Ser
             185                 190                     195

Gln Gln Lys Thr Gly Val Gly Gly Thr Gly Ile Asp Ile Pro Val
             200                 205                     210

Leu Leu Leu Leu Ile Asp Gly Asp Glu Lys Met Leu Thr Arg Ile
             215                 220                     225

Glu Asn Ala Thr Gln Ala Gln Leu Pro Cys Leu Leu Val Ala Gly
             230                 235                     240

Ser Gly Gly Ala Ala Asp Cys Leu Ala Glu Thr Leu Glu Asp Thr
             245                 250                     255

Leu Ala Pro Gly Ser Gly Gly Ala Arg Gln Gly Glu Ala Arg Asp
             260                 265                     270

Arg Ile Arg Arg Phe Phe Pro Lys Gly Asp Leu Glu Val Leu Gln
             275                 280                     285

Ala Gln Val Glu Arg Ile Met Thr Arg Lys Glu Leu Leu Thr Val
             290                 295                     300

Tyr Ser Ser Glu Asp Gly Ser Glu Glu Phe Glu Thr Ile Val Leu
             305                 310                     315

Lys Ala Leu Val Lys Ala Cys Gly Ser Ser Glu Ala Ser Ala Tyr
             320                 325                     330

Leu Asp Glu Leu Arg Leu Ala Val Ala Trp Asn Arg Val Asp Ile
             335                 340                     345

Ala Gln Ser Glu Leu Phe Arg Gly Asp Ile Gln Trp Arg Ser Phe
             350                 355                     360

His Leu Glu Ala Ser Leu Met Asp Ala Leu Leu Asn Asp Arg Pro
```

220

```
                365                    370                     375
Glu Phe Val Arg Leu Leu Ile Ser His Gly Leu Ser Leu Gly His
            380                    385                     390
Phe Leu Thr Pro Met Arg Leu Ala Gln Leu Tyr Ser Ala Ala Pro
            395                    400                     405
Ser Asn Ser Leu Ile Arg Asn Leu Leu Asp Gln Ala Ser His Ser
            410                    415                     420
Ala Gly Thr Lys Ala Pro Ala Leu Lys Gly Gly Ala Ala Glu Leu
            425                    430                     435
Arg Pro Pro Asp Val Gly His Val Leu Arg Met Leu Leu Gly Lys
            440                    445                     450
Met Cys Ala Pro Arg Tyr Pro Ser Gly Gly Ala Trp Asp Pro His
            455                    460                     465
Pro Gly Gln Gly Phe Gly Glu Ser Met Tyr Leu Leu Ser Asp Lys
            470                    475                     480
Ala Thr Ser Pro Leu Ser Leu Asp Ala Gly Leu Gly Gln Ala Pro
            485                    490                     495
Trp Ser Asp Leu Leu Leu Trp Ala Leu Leu Leu Asn Arg Ala Gln
            500                    505                     510
Met Ala Met Tyr Phe Trp Glu Met Gly Ser Asn Ala Val Ser Ser
            515                    520                     525
Ala Leu Gly Ala Cys Leu Leu Leu Arg Val Met Ala Arg Leu Glu
            530                    535                     540
Pro Asp Ala Glu Glu Ala Ala Arg Arg Lys Asp Leu Ala Phe Lys
            545                    550                     555
Phe Glu Gly Met Gly Val Asp Leu Phe Gly Glu Cys Tyr Arg Ser
            560                    565                     570
Ser Glu Val Arg Ala Ala Arg Leu Leu Leu Arg Arg Cys Pro Leu
            575                    580                     585
Trp Gly Asp Ala Thr Cys Leu Gln Leu Ala Met Gln Ala Asp Ala
            590                    595                     600
Arg Ala Phe Phe Ala Gln Asp Gly Val Gln Ser Leu Leu Thr Gln
            605                    610                     615
Lys Trp Trp Gly Asp Met Ala Ser Thr Thr Pro Ile Trp Ala Leu
            620                    625                     630
Val Leu Ala Phe Phe Cys Pro Pro Leu Ile Tyr Thr Arg Leu Ile
            635                    640                     645
Thr Phe Arg Lys Ser Glu Glu Glu Pro Thr Arg Glu Glu Leu Glu
            650                    655                     660
```

221

```
Phe Asp Met Asp Ser Val Ile Asn Gly Glu Gly Pro Val Gly Thr
                665             670             675

Ala Asp Pro Ala Glu Lys Thr Pro Leu Gly Val Pro Arg Gln Ser
                680             685             690

Gly Arg Pro Gly Cys Cys Gly Gly Arg Cys Gly Gly Arg Arg Cys
                695             700             705

Leu Arg Arg Trp Phe His Phe Trp Gly Ala Pro Val Thr Ile Phe
                710             715             720

Met Gly Asn Val Val Ser Tyr Leu Leu Phe Leu Leu Leu Phe Ser
                725             730             735

Arg Val Leu Leu Val Asp Phe Gln Pro Ala Pro Pro Gly Ser Leu
                740             745             750

Glu Leu Leu Leu Tyr Phe Trp Ala Phe Thr Leu Leu Cys Glu Glu
                755             760             765

Leu Arg Gln Gly Leu Ser Gly Gly Gly Ser Leu Ala Ser Gly
                770             775             780

Gly Pro Gly Pro Gly His Ala Ser Leu Ser Gln Arg Leu Arg Leu
                785             790             795

Tyr Leu Ala Asp Ser Trp Asn Gln Cys Asp Leu Val Ala Leu Thr
                800             805             810

Cys Phe Leu Leu Gly Val Gly Cys Arg Leu Thr Pro Gly Leu Tyr
                815             820             825

His Leu Gly Arg Thr Val Leu Cys Ile Asp Phe Met Val Phe Thr
                830             835             840

Val Arg Leu Leu His Ile Phe Thr Val Asn Lys Gln Leu Gly Pro
                845             850             855

Lys Ile Val Ile Val Ser Lys Met Met Lys Asp Val Phe Phe Phe
                860             865             870

Leu Phe Phe Leu Gly Val Trp Leu Val Ala Tyr Gly Val Ala Thr
                875             880             885

Glu Gly Leu Leu Arg Pro Arg Asp Ser Asp Phe Pro Ser Ile Leu
                890             895             900

Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln Ile Phe Gly Gln Ile
                905             910             915

Pro Gln Glu Asp Met Asp Val Ala Leu Met Glu His Ser Asn Cys
                920             925             930

Ser Ser Glu Pro Gly Phe Trp Ala His Pro Pro Gly Ala Gln Ala
                935             940             945

Gly Thr Cys Val Ser Gln Tyr Ala Asn Trp Leu Val Val Leu Leu
```

Leu Val Ile Phe Leu Leu Val Ala Asn Ile Leu Leu Val Asn Leu
                965   970   975

Leu Ile Ala Met Phe Ser Tyr Thr Phe Gly Lys Val Gln Gly Asn
                980   985   990

Ser Asp Leu Tyr Trp Lys Ala Gln Arg Tyr Arg Leu Ile Arg Glu
                995   1000   1005

Phe His Ser Arg Pro Ala Leu Ala Pro Pro Phe Ile Val Ile Ser
                1010   1015   1020

His Leu Arg Leu Leu Leu Arg Gln Leu Cys Arg Arg Pro Arg Ser
                1025   1030   1035

Pro Gln Pro Ser Ser Pro Ala Leu Glu His Phe Arg Val Tyr Leu
                1040   1045   1050

Ser Lys Glu Ala Glu Arg Lys Leu Leu Thr Trp Glu Ser Val His
                1055   1060   1065

Lys Glu Asn Phe Leu Leu Ala Arg Ala Arg Asp Lys Arg Glu Ser
                1070   1075   1080

Asp Ser Glu Arg Leu Glu Arg Thr Ser Gln Lys Val Asp Leu Ala
                1085   1090   1095

Leu Lys Gln Leu Gly His Ile Arg Glu Tyr Glu Gln Arg Leu Lys
                1100   1105   1110

Val Leu Glu Arg Glu Val Gln Gln Cys Ser Arg Val Leu Gly Trp
                1115   1120   1125

Val Thr

<210> 124
<211> 1932
<212> PRT
<213> Homo sapien

<400> 124
Met His Leu His Arg Arg Phe Thr Asp Leu Ile Trp Lys Asn Leu
1   5   10   15

Cys Pro Ala Leu Ile Val Ile Leu Gly Asn Pro Ile His Asp Lys
                20   25   30

Thr Ile Thr Ser Ala His Thr Ser Ser Thr Ser Thr Ser Leu Glu
                35   40   45

Ser Asp Ser Ala Ser Pro Gly Val Ser Asp His Gly Arg Gly Ser
                50   55   60

Gly Cys Ser Cys Thr Ala Pro Ala Leu Ser Gly Pro Val Ala Arg
                65   70   75

223

```
Thr Ile Tyr Tyr Ile Ala Ala Glu Leu Val Arg Leu Val Gly Ser
              80                  85                      90

Val Asp Ser Met Lys Pro Val Leu Gln Ser Leu Tyr His Arg Val
              95                 100                     105

Leu Leu Tyr Pro Pro Pro Gln His Arg Val Glu Ala Ile Lys Ile
             110                 115                     120

Met Lys Glu Ile Leu Gly Ser Pro Gln Arg Leu Cys Asp Leu Ala
             125                 130                     135

Gly Pro Ser Ser Thr Glu Ser Glu Ser Arg Lys Arg Ser Ile Ser
             140                 145                     150

Lys Arg Lys Ser His Leu Asp Leu Leu Lys Leu Ile Met Asp Gly
             155                 160                     165

Met Thr Glu Ala Cys Ile Lys Gly Gly Ile Glu Ala Cys Tyr Ala
             170                 175                     180

Ala Val Ser Cys Val Cys Thr Leu Leu Gly Ala Leu Asp Glu Leu
             185                 190                     195

Ser Gln Gly Lys Gly Leu Ser Glu Gly Gln Val Gln Leu Leu Leu
             200                 205                     210

Leu Arg Leu Glu Glu Leu Lys Asp Gly Ala Glu Trp Ser Arg Asp
             215                 220                     225

Ser Met Glu Ile Asn Glu Ala Asp Phe Arg Trp Gln Arg Arg Val
             230                 235                     240

Leu Ser Ser Glu His Thr Pro Trp Glu Ser Gly Asn Glu Arg Ser
             245                 250                     255

Leu Asp Ile Ser Ile Ser Val Thr Thr Asp Thr Gly Gln Thr Thr
             260                 265                     270

Leu Glu Gly Glu Leu Gly Gln Thr Thr Pro Glu Asp His Ser Gly
             275                 280                     285

Asn His Lys Asn Ser Leu Lys Ser Pro Ala Ile Pro Glu Gly Lys
             290                 295                     300

Glu Thr Leu Ser Lys Val Leu Glu Thr Glu Ala Val Asp Gln Pro
             305                 310                     315

Asp Val Val Gln Arg Ser His Thr Val Pro Tyr Pro Asp Ile Thr
             320                 325                     330

Asn Phe Leu Ser Val Asp Cys Arg Thr Arg Ser Tyr Gly Ser Arg
             335                 340                     345

Tyr Ser Glu Ser Asn Phe Ser Val Asp Asp Gln Asp Leu Ser Arg
             350                 355                     360

Thr Glu Phe Asp Ser Cys Asp Gln Tyr Ser Met Ala Ala Glu Lys
```

224

Asp Ser Gly Arg Ser Asp Val Ser Asp Ile Gly Ser Asp Asn Cys
380 385 390

Ser Leu Ala Asp Glu Glu Gln Thr Pro Arg Asp Cys Leu Gly His
395 400 405

Arg Ser Leu Arg Thr Ala Ala Leu Ser Leu Lys Leu Leu Lys Asn
410 415 420

Gln Glu Ala Asp Gln His Ser Ala Arg Leu Phe Ile Gln Ser Leu
425 430 435

Glu Gly Leu Leu Pro Arg Leu Leu Ser Leu Ser Asn Val Glu Glu
440 445 450

Val Asp Thr Ala Leu Gln Asn Phe Ala Ser Thr Phe Cys Ser Gly
455 460 465

Met Met His Ser Pro Gly Phe Asp Gly Asn Ser Ser Leu Ser Phe
470 475 480

Gln Met Leu Met Asn Ala Asp Ser Leu Tyr Thr Ala Ala His Cys
485 490 495

Ala Leu Leu Leu Asn Leu Lys Leu Ser His Gly Asp Tyr Tyr Arg
500 505 510

Lys Arg Pro Thr Leu Ala Pro Gly Val Met Lys Asp Phe Met Lys
515 520 525

Gln Val Gln Thr Ser Gly Val Leu Met Val Phe Ser Gln Ala Trp
530 535 540

Ile Glu Glu Leu Tyr His Gln Val Leu Asp Arg Asn Met Leu Gly
545 550 555

Glu Ala Gly Tyr Trp Gly Ser Pro Glu Asp Asn Ser Leu Pro Leu
560 565 570

Ile Thr Met Leu Thr Asp Ile Asp Gly Leu Glu Ser Ser Ala Ile
575 580 585

Gly Gly Gln Leu Met Ala Ser Ala Ala Thr Glu Ser Pro Phe Ala
590 595 600

Gln Ser Arg Arg Ile Asp Asp Ser Thr Val Ala Gly Val Ala Phe
605 610 615

Ala Arg Tyr Ile Leu Val Gly Cys Trp Lys Asn Leu Ile Asp Thr
620 625 630

Leu Ser Thr Pro Leu Thr Gly Arg Met Ala Gly Ser Ser Lys Gly
635 640 645

Leu Ala Phe Ile Leu Gly Ala Glu Gly Ile Lys Glu Gln Asn Gln
650 655 660

225

```
Lys Glu Arg Asp Ala Ile Cys Met Ser Leu Asp Gly Leu Arg Lys
            665             670             675

Ala Ala Arg Leu Ser Cys Ala Leu Gly Val Ala Ala Asn Cys Ala
            680             685             690

Ser Ala Leu Ala Gln Met Ala Ala Ala Ser Cys Val Gln Glu Glu
            695             700             705

Lys Glu Glu Arg Glu Ala Gln Glu Pro Ser Asp Ala Ile Thr Gln
            710             715             720

Val Lys Leu Lys Val Glu Gln Lys Leu Glu Gln Ile Gly Lys Val
            725             730             735

Gln Gly Val Trp Leu His Thr Ala His Val Leu Cys Met Glu Ala
            740             745             750

Ile Leu Ser Val Gly Leu Glu Met Gly Ser His Asn Pro Asp Cys
            755             760             765

Trp Pro His Val Phe Arg Val Cys Glu Tyr Val Gly Thr Leu Glu
            770             775             780

His Asn His Phe Ser Asp Gly Ala Ser Gln Pro Pro Leu Thr Ile
            785             790             795

Ser Gln Pro Gln Lys Ala Thr Gly Ser Ala Gly Leu Leu Gly Asp
            800             805             810

Pro Glu Cys Glu Gly Ser Pro Pro Glu His Ser Pro Glu Gln Gly
            815             820             825

Arg Ser Leu Ser Thr Ala Pro Val Val Gln Pro Leu Ser Ile Gln
            830             835             840

Asp Leu Val Arg Glu Gly Ser Arg Gly Arg Ala Ser Asp Phe Arg
            845             850             855

Gly Gly Ser Leu Met Ser Gly Ser Ser Ala Ala Lys Val Val Leu
            860             865             870

Thr Leu Ser Thr Gln Ala Asp Arg Leu Phe Glu Asp Ala Thr Asp
            875             880             885

Lys Leu Asn Leu Met Ala Leu Gly Gly Phe Leu Tyr Gln Leu Lys
            890             895             900

Lys Ala Ser Gln Ser Gln Leu Phe His Ser Val Thr Asp Thr Val
            905             910             915

Asp Tyr Ser Leu Ala Met Pro Gly Glu Val Lys Ser Thr Gln Asp
            920             925             930

Arg Lys Ser Ala Leu His Leu Phe Arg Leu Gly Asn Ala Met Leu
            935             940             945

Arg Ile Val Arg Ser Lys Ala Arg Pro Leu Leu His Val Met Arg
```

Cys Trp Ser Leu Val Ala Pro His Leu Val Glu Ala Ala Cys His
                965   970   975

Lys Glu Arg His Val Ser Gln Lys Ala Val Ser Phe Ile His Asp
                980   985   990

Ile Leu Thr Glu Val Leu Thr Asp Trp Asn Glu Pro Pro His Phe
                995   1000   1005

His Phe Asn Glu Ala Leu Phe Arg Pro Phe Glu Arg Ile Met Gln
                1010   1015   1020

Leu Glu Leu Cys Asp Glu Asp Val Gln Asp Gln Val Val Thr Ser
                1025   1030   1035

Ile Gly Glu Leu Val Glu Val Cys Ser Thr Gln Ile Gln Ser Gly
                1040   1045   1050

Trp Arg Pro Leu Phe Ser Ala Leu Glu Thr Val His Gly Gly Asn
                1055   1060   1065

Lys Ser Glu Met Lys Glu Tyr Leu Val Gly Asp Tyr Ser Met Gly
                1070   1075   1080

Lys Gly Gln Ala Pro Val Phe Asp Val Phe Glu Ala Phe Leu Asn
                1085   1090   1095

Thr Asp Asn Ile Gln Val Phe Ala Asn Ala Ala Thr Ser Tyr Ile
                1100   1105   1110

Met Cys Leu Met Lys Phe Val Lys Gly Leu Gly Glu Val Asp Cys
                1115   1120   1125

Lys Glu Ile Gly Asp Cys Ala Pro Ala Pro Gly Ala Pro Ser Thr
                1130   1135   1140

Asp Leu Cys Leu Pro Ala Leu Asp Tyr Leu Arg Arg Cys Ser Gln
                1145   1150   1155

Leu Leu Ala Lys Ile Tyr Lys Met Pro Leu Lys Pro Ile Phe Leu
                1160   1165   1170

Ser Gly Arg Leu Ala Gly Leu Pro Arg Arg Leu Gln Glu Gln Ser
                1175   1180   1185

Ala Ser Ser Glu Asp Gly Ile Glu Ser Val Leu Ser Asp Phe Asp
                1190   1195   1200

Asp Asp Thr Gly Leu Ile Glu Val Trp Ile Ile Leu Leu Glu Gln
                1205   1210   1215

Leu Thr Ala Ala Val Ser Asn Cys Pro Arg Gln His Gln Pro Pro
                1220   1225   1230

Thr Leu Asp Leu Leu Phe Glu Leu Leu Arg Asp Val Thr Lys Thr
                1235   1240   1245

227

```
Pro Gly Pro Gly Phe Gly Ile Tyr Ala Val Val His Leu Leu Leu
            1250            1255            1260

Pro Val Met Ser Val Trp Leu Arg Arg Ser His Lys Asp His Ser
            1265            1270            1275

Tyr Trp Asp Met Ala Ser Ala Asn Phe Lys His Ala Ile Gly Leu
            1280            1285            1290

Ser Cys Glu Leu Val Val Glu His Ile Gln Ser Phe Leu His Ser
            1295            1300            1305

Asp Ile Arg Tyr Glu Ser Met Ile Asn Thr Met Leu Lys Asp Leu
            1310            1315            1320

Phe Glu Leu Leu Val Ala Cys Val Ala Lys Pro Thr Glu Thr Ile
            1325            1330            1335

Ser Arg Val Gly Cys Ser Cys Ile Arg Tyr Val Leu Val Thr Ala
            1340            1345            1350

Gly Pro Val Phe Thr Glu Glu Met Trp Arg Leu Ala Cys Cys Ala
            1355            1360            1365

Leu Gln Asp Ala Phe Ser Ala Thr Leu Lys Pro Val Lys Asp Leu
            1370            1375            1380

Leu Gly Cys Phe His Ser Gly Thr Glu Ser Phe Ser Gly Glu Gly
            1385            1390            1395

Cys Gln Val Arg Val Ala Ala Pro Ser Ser Ser Pro Ser Ala Glu
            1400            1405            1410

Ala Glu Tyr Trp Arg Ile Arg Ala Met Ala Gln Gln Val Phe Met
            1415            1420            1425

Leu Asp Thr Gln Cys Ser Pro Lys Thr Pro Asn Asn Phe Asp His
            1430            1435            1440

Ala Gln Ser Cys Gln Leu Ile Ile Glu Leu Pro Pro Asp Glu Lys
            1445            1450            1455

Pro Asn Gly His Thr Lys Lys Ser Val Ser Phe Arg Glu Ile Val
            1460            1465            1470

Val Ser Leu Leu Ser His Gln Val Leu Leu Gln Asn Leu Tyr Asp
            1475            1480            1485

Ile Leu Leu Glu Glu Phe Val Lys Gly Pro Ser Pro Gly Glu Glu
            1490            1495            1500

Lys Thr Ile Gln Val Pro Glu Ala Lys Leu Ala Gly Phe Leu Arg
            1505            1510            1515

Tyr Ile Ser Met Gln Asn Leu Ala Val Ile Phe Asp Leu Leu Leu
            1520            1525            1530

Asp Ser Tyr Arg Thr Ala Arg Glu Phe Asp Thr Ser Pro Gly Leu
```

228

Lys Cys Leu Leu Lys Lys Val Ser Gly Ile Gly Gly Ala Ala Asn
                    1550   1555   1560

Leu Tyr Arg Gln Ser Ala Met Ser Phe Asn Ile Tyr Phe His Ala
                    1565   1570   1575

Leu Val Cys Ala Val Leu Thr Asn Gln Glu Thr Ile Thr Ala Glu
                    1580   1585   1590

Gln Val Lys Lys Val Leu Phe Glu Asp Asp Glu Arg Ser Thr Asp
                    1595   1600   1605

Ser Ser Gln Gln Cys Ser Ser Glu Asp Glu Asp Ile Phe Glu Glu
                    1610   1615   1620

Thr Ala Gln Val Ser Pro Pro Arg Gly Lys Glu Lys Arg Gln Trp
                    1625   1630   1635

Arg Ala Arg Met Pro Leu Leu Ser Val Gln Pro Val Ser Asn Ala
                    1640   1645   1650

Asp Trp Val Trp Leu Val Lys Arg Leu His Lys Leu Cys Met Glu
                    1655   1660   1665

Leu Cys Asn Asn Tyr Ile Gln Met His Leu Asp Leu Glu Asn Cys
                    1670   1675   1680

Met Glu Glu Pro Pro Ile Phe Lys Gly Asp Pro Phe Phe Ile Leu
                    1685   1690   1695

Pro Ser Phe Gln Ser Glu Ser Ser Thr Pro Ser Thr Gly Gly Phe
                    1700   1705   1710

Ser Gly Lys Glu Thr Pro Ser Glu Asp Asp Arg Ser Gln Ser Arg
                    1715   1720   1725

Glu His Met Gly Glu Ser Leu Ser Leu Lys Ala Gly Gly Gly Asp
                    1730   1735   1740

Leu Leu Leu Pro Pro Ser Pro Lys Val Glu Lys Lys Asp Pro Ser
                    1745   1750   1755

Arg Lys Lys Glu Trp Trp Glu Asn Ala Gly Asn Lys Ile Tyr Thr
                    1760   1765   1770

Met Ala Ala Asp Lys Thr Ile Ser Lys Leu Met Thr Glu Tyr Lys
                    1775   1780   1785

Lys Arg Lys Gln Gln His Asn Leu Ser Ala Phe Pro Lys Glu Val
                    1790   1795   1800

Lys Val Glu Lys Lys Gly Glu Pro Leu Gly Pro Arg Gly Gln Asp
                    1805   1810   1815

Ser Pro Leu Leu Gln Arg Pro Gln His Leu Met Asp Gln Gly Gln
                    1820   1825   1830

229

```
Met Arg His Ser Phe Ser Ala Gly Pro Glu Leu Leu Arg Gln Asp
            1835                1840                1845

Lys Arg Pro Arg Ser Gly Ser Thr Gly Ser Ser Leu Ser Val Ser
            1850                1855                1860

Val Arg Asp Ala Glu Ala Gln Ile Gln Ala Trp Thr Asn Met Val
            1865                1870                1875

Leu Thr Val Leu Asn Gln Ile Gln Ile Leu Pro Asp Gln Thr Phe
            1880                1885                1890

Thr Ala Leu Gln Pro Ala Val Phe Pro Cys Ile Ser Gln Leu Thr
            1895                1900                1905

Cys His Val Thr Asp Ile Arg Val Arg Gln Ala Val Arg Glu Trp
            1910                1915                1920

Leu Gly Arg Val Gly Arg Val Tyr Asp Ile Ile Val
            1925                1930
```

<210> 125
<211> 317
<212> PRT
<213> Homo sapien

<400> 125
```
Met Val Asp Pro Asn Gly Asn Glu Ser Ser Ala Thr Tyr Phe Ile
  1               5                10                15

Leu Ile Gly Leu Pro Gly Leu Glu Glu Ala Gln Phe Trp Leu Ala
            20                25                30

Phe Pro Leu Cys Ser Leu Tyr Leu Ile Ala Val Leu Gly Asn Leu
            35                40                45

Thr Ile Ile Tyr Ile Val Arg Thr Glu His Ser Leu His Glu Pro
            50                55                60

Met Tyr Ile Phe Leu Cys Met Leu Ser Gly Ile Asp Ile Leu Ile
            65                70                75

Ser Thr Ser Ser Met Pro Lys Met Leu Ala Ile Phe Trp Phe Asn
            80                85                90

Ser Thr Thr Ile Gln Phe Asp Ala Cys Leu Leu Gln Ile Phe Ala
            95                100               105

Ile His Ser Leu Ser Gly Met Glu Ser Thr Val Leu Leu Ala Met
            110               115               120

Ala Phe Asp Arg Tyr Val Ala Ile Cys His Pro Leu Arg His Ala
            125               130               135

Thr Val Leu Thr Leu Pro Arg Val Thr Lys Ile Gly Val Ala Ala
            140               145               150

Val Val Arg Gly Ala Ala Leu Met Ala Pro Leu Pro Val Phe Ile
```

230

Lys Gln Leu Pro Phe Cys Arg Ser Asn Ile Leu Ser His Ser Tyr
                170   175   180

Cys Leu His Gln Asp Val Met Lys Leu Ala Cys Asp Asp Ile Arg
                185   190   195

Val Asn Val Val Tyr Gly Leu Ile Val Ile Ile Ser Ala Ile Gly
                200   205   210

Leu Asp Ser Leu Leu Ile Ser Phe Ser Tyr Leu Leu Ile Leu Lys
                215   220   225

Thr Val Leu Gly Leu Thr Arg Glu Ala Gln Ala Lys Ala Phe Gly
                230   235   240

Thr Cys Val Ser His Val Cys Ala Val Phe Ile Phe Tyr Val Pro
                245   250   255

Phe Ile Gly Leu Ser Met Val His Arg Phe Ser Lys Arg Arg Asp
                260   265   270

Ser Pro Leu Pro Val Ile Leu Ala Asn Ile Tyr Leu Leu Val Pro
                275   280   285

Pro Val Leu Asn Pro Ile Val Tyr Gly Val Lys Thr Lys Glu Ile
                290   295   300

Arg Gln Arg Ile Leu Arg Leu Phe His Val Ala Thr His Ala Ser
                305   310   315

Glu Pro

<210> 126
<211> 530
<212> PRT
<213> Homo sapien

<400> 126
 Met Gly Ser Asn Ser Gly Gln Ala Gly Arg His Ile Tyr Lys Ser
   1   5   10   15

 Leu Ala Asp Asp Gly Pro Phe Asp Ser Val Glu Pro Pro Lys Arg
                20   25   30

 Pro Thr Ser Arg Leu Ile Met His Ser Met Ala Met Phe Gly Arg
                35   40   45

 Glu Phe Cys Tyr Ala Val Glu Ala Ala Tyr Val Thr Pro Val Leu
                50   55   60

 Leu Ser Val Gly Leu Pro Ser Ser Leu Tyr Ser Ile Val Trp Phe
                65   70   75

 Leu Ser Pro Ile Leu Gly Phe Leu Leu Gln Pro Val Val Gly Ser
                80   85   90

231

```
Ala Ser Asp His Cys Arg Ser Arg Trp Gly Arg Arg Arg Pro Tyr
             95                     100                     105

Ile Leu Thr Leu Gly Val Met Met Leu Val Gly Met Ala Leu Tyr
                110                     115                     120

Leu Asn Gly Ala Thr Val Val Ala Ala Leu Ile Ala Asn Pro Arg
                125                     130                     135

Arg Lys Leu Val Trp Ala Ile Ser Val Thr Met Ile Gly Val Val
                140                     145                     150

Leu Phe Asp Phe Ala Ala Asp Phe Ile Asp Gly Pro Ile Lys Ala
                155                     160                     165

Tyr Leu Phe Asp Val Cys Ser His Gln Asp Lys Glu Lys Gly Leu
                170                     175                     180

His Tyr His Ala Leu Phe Thr Gly Phe Gly Gly Ala Leu Gly Tyr
                185                     190                     195

Leu Leu Gly Ala Ile Asp Trp Ala His Leu Glu Leu Gly Arg Leu
                200                     205                     210

Leu Gly Thr Glu Phe Gln Val Met Phe Phe Phe Ser Ala Leu Val
                215                     220                     225

Leu Thr Leu Cys Phe Thr Val His Leu Cys Ser Ile Ser Glu Ala
                230                     235                     240

Pro Leu Thr Glu Val Ala Lys Gly Ile Pro Pro Gln Gln Thr Pro
                245                     250                     255

Gln Asp Pro Pro Leu Ser Ser Asp Gly Met Tyr Glu Tyr Gly Ser
                260                     265                     270

Ile Glu Lys Val Lys Asn Gly Tyr Val Asn Pro Glu Leu Ala Met
                275                     280                     285

Gln Gly Ala Lys Asn Lys Asn His Ala Glu Gln Thr Arg Arg Ala
                290                     295                     300

Met Thr Leu Lys Ser Leu Leu Arg Ala Leu Val Asn Met Pro Pro
                305                     310                     315

His Tyr Arg Tyr Leu Cys Ile Ser His Leu Ile Gly Trp Thr Ala
                320                     325                     330

Phe Leu Ser Asn Met Leu Phe Phe Thr Asp Phe Met Gly Gln Ile
                335                     340                     345

Val Tyr Arg Gly Asp Pro Tyr Ser Ala His Asn Ser Thr Glu Phe
                350                     355                     360

Leu Ile Tyr Glu Arg Gly Val Glu Val Gly Cys Trp Gly Phe Cys
                365                     370                     375

Ile Asn Ser Val Phe Ser Ser Leu Tyr Ser Tyr Phe Gln Lys Val
```

232

```
                  380                      385                      390
Leu Val Ser Tyr Ile Gly Leu Lys Gly Leu Tyr Phe Thr Gly Tyr
              395                      400                      405

Leu Leu Phe Gly Leu Gly Thr Gly Phe Ile Gly Leu Phe Pro Asn
              410                      415                      420

Val Tyr Ser Thr Leu Val Leu Cys Ser Leu Phe Gly Val Met Ser
              425                      430                      435

Ser Thr Leu Tyr Thr Val Pro Phe Asn Leu Ile Thr Glu Tyr His
              440                      445                      450

Arg Glu Glu Glu Lys Glu Arg Gln Gln Ala Pro Gly Gly Asp Pro
              455                      460                      465

Asp Asn Ser Val Arg Gly Lys Gly Met Asp Cys Ala Thr Leu Thr
              470                      475                      480

Cys Met Val Gln Leu Ala Gln Ile Leu Val Gly Gly Gly Leu Gly
              485                      490                      495

Phe Leu Val Asn Thr Ala Gly Thr Val Val Val Val Val Ile Thr
              500                      505                      510

Ala Ser Ala Val Ala Leu Ile Gly Cys Cys Phe Val Ala Leu Phe
              515                      520                      525

Val Arg Tyr Val Asp
              530

<210> 127
<211> 811
<212> PRT
<213> Homo sapien

<400> 127
 Met Arg Leu Ile Arg Asn Ile Tyr Ile Phe Cys Ser Ile Val Met
   1               5                      10                      15

 Thr Ala Glu Gly Asp Ala Pro Glu Leu Pro Glu Glu Arg Glu Leu
                 20                      25                      30

 Met Thr Asn Cys Ser Asn Met Ser Leu Arg Lys Val Pro Ala Asp
                 35                      40                      45

 Leu Thr Pro Ala Thr Thr Thr Leu Asp Leu Ser Tyr Asn Leu Leu
                 50                      55                      60

 Phe Gln Leu Gln Ser Ser Asp Phe His Ser Val Ser Lys Leu Arg
                 65                      70                      75

 Val Leu Ile Leu Cys His Asn Arg Ile Gln Gln Leu Asp Leu Lys
                 80                      85                      90

 Thr Phe Glu Phe Asn Lys Glu Leu Arg Tyr Leu Asp Leu Ser Asn
                 95                      100                     105
```

```
Asn Arg Leu Lys Ser Val Thr Trp Tyr Leu Leu Ala Gly Leu Arg
            110             115                     120

Tyr Leu Asp Leu Ser Phe Asn Asp Phe Asp Thr Met Pro Ile Cys
            125             130                     135

Glu Glu Ala Gly Asn Met Ser His Leu Glu Ile Leu Gly Leu Ser
            140             145                     150

Gly Ala Lys Ile Gln Lys Ser Asp Phe Gln Lys Ile Ala His Leu
            155             160                     165

His Leu Asn Thr Val Phe Leu Gly Phe Arg Thr Leu Pro His Tyr
            170             175                     180

Glu Glu Gly Ser Leu Pro Ile Leu Asn Thr Thr Lys Leu His Ile
            185             190                     195

Val Leu Pro Met Asp Thr Asn Phe Trp Val Leu Leu Arg Asp Gly
            200             205                     210

Ile Lys Thr Ser Lys Ile Leu Glu Met Thr Asn Ile Asp Gly Lys
            215             220                     225

Ser Gln Phe Val Ser Tyr Glu Met Gln Arg Asn Leu Ser Leu Glu
            230             235                     240

Asn Ala Lys Thr Ser Val Leu Leu Leu Asn Lys Val Asp Leu Leu
            245             250                     255

Trp Asp Asp Leu Phe Leu Ile Leu Gln Phe Val Trp His Thr Ser
            260             265                     270

Val Glu His Phe Gln Ile Arg Asn Val Thr Phe Gly Gly Lys Ala
            275             280                     285

Tyr Leu Asp His Asn Ser Phe Asp Tyr Ser Asn Thr Val Met Arg
            290             295                     300

Thr Ile Lys Leu Glu His Val His Phe Arg Val Phe Tyr Ile Gln
            305             310                     315

Gln Asp Lys Ile Tyr Leu Leu Leu Thr Lys Met Asp Ile Glu Asn
            320             325                     330

Leu Thr Ile Ser Asn Ala Gln Met Pro His Met Leu Phe Pro Asn
            335             340                     345

Tyr Pro Thr Lys Phe Gln Tyr Leu Asn Phe Ala Asn Asn Ile Leu
            350             355                     360

Thr Asp Glu Leu Phe Lys Arg Thr Ile Gln Leu Pro His Leu Lys
            365             370                     ·375

Thr Leu Ile Leu Asn Gly Asn Lys Leu Glu Thr Leu Ser Leu Val
            380             385                     390

Ser Cys Phe Ala Asn Asn Thr Pro Leu Glu His Leu Asp Leu Ser
```

234

Gln Asn Leu Leu Gln His Lys Asn Asp Glu Asn Cys Ser Trp Pro
                410   415   420

Glu Thr Val Val Asn Met Asn Leu Ser Tyr Asn Lys Leu Ser Asp
                425   430   435

Ser Val Phe Arg Cys Leu Pro Lys Ser Ile Gln Ile Leu Asp Leu
                440   445   450

Asn Asn Asn Gln Ile Gln Thr Val Pro Lys Glu Thr Ile His Leu
                455   460   465

Met Ala Leu Arg Glu Leu Asn Ile Ala Phe Asn Phe Leu Thr Asp
                470   475   480

Leu Pro Gly Cys Ser His Phe Ser Arg Leu Ser Val Leu Asn Ile
                485   490   495

Glu Met Asn Phe Ile Leu Ser Pro Ser Leu Asp Phe Val Gln Ser
                500   505   510

Cys Gln Glu Val Lys Thr Leu Asn Ala Gly Arg Asn Pro Phe Arg
                515   520   525

Cys Thr Cys Glu Leu Lys Asn Phe Ile Gln Leu Glu Thr Tyr Ser
                530   535   540

Glu Val Met Met Val Gly Trp Ser Asp Ser Tyr Thr Cys Glu Tyr
                545   550   555

Pro Leu Asn Leu Arg Gly Thr Arg Leu Lys Asp Val His Leu His
                560   565   570

Glu Leu Ser Cys Asn Thr Ala Leu Leu Ile Val Thr Ile Val Val
                575   580   585

Ile Met Leu Val Leu Gly Leu Ala Val Ala Phe Cys Cys Leu His
                590   595   600

Phe Asp Leu Pro Trp Tyr Leu Arg Met Leu Gly Gln Cys Thr Gln
                605   610   ·615

Thr Trp His Arg Val Arg Lys Thr Thr Gln Glu Gln Leu Lys Arg
                620   625   630

Asn Val Arg Phe His Ala Phe Ile Ser Tyr Ser Glu His Asp Ser
                635   640   645

Leu Trp Val Lys Asn Glu Leu Ile Pro Asn Leu Glu Lys Glu Asp
                650   655   660

Gly Ser Ile Leu Ile Cys Leu Tyr Glu Ser Tyr Phe Asp Pro Gly
                665   670   675

Lys Ser Ile Ser Glu Asn Ile Val Ser Phe Ile Glu Lys Ser Tyr
                680   685   690

235

```
Lys Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Asn Glu Trp
              695             700             705

Cys His Tyr Glu Phe Tyr Phe Ala His His Asn Leu Phe His Glu
              710             715             720

Asn Ser Asp His Ile Ile Leu Ile Leu Leu Glu Pro Ile Pro Phe
              725             730             735

Tyr Cys Ile Pro Thr Arg Tyr His Lys Leu Lys Ala Leu Leu Glu
              740             745             750

Lys Lys Ala Tyr Leu Glu Trp Pro Lys Asp Arg Arg Lys Cys Gly
              755             760             765

Leu Phe Trp Ala Asn Leu Arg Ala Ala Ile Asn Val Asn Val Leu
              770             775             780

Ala Thr Arg Glu Met Tyr Glu Leu Gln Thr Phe Thr Glu Leu Asn
              785             790             795

Glu Glu Ser Arg Gly Ser Thr Ile Ser Leu Met Arg Thr Asp Cys
              800             805             810

Leu


<210> 128
<211> 1382
<212> PRT
<213> Homo sapien

<400> 128
Met Thr Arg Lys Arg Thr Tyr Trp Val Pro Asn Ser Ser Gly Gly
  1           5               10              15

Leu Val Asn Arg Gly Ile Asp Ile Gly Asp Asp Met Val Ser Gly
              20              25              30

Leu Ile Tyr Lys Thr Tyr Thr Leu Gln Asp Gly Pro Trp Ser Gln
              35              40              45

Gln Glu Arg Asn Pro Glu Ala Pro Gly Arg Ala Ala Val Pro Pro
              50              55              60

Trp Gly Lys Tyr Asp Ala Ala Leu Arg Thr Met Ile Pro Phe Arg
              65              70              75

Pro Lys Pro Arg Phe Pro Ala Pro Gln Pro Leu Asp Asn Ala Gly
              80              85              90

Leu Phe Ser Tyr Leu Thr Val Ser Trp Leu Thr Pro Leu Met Ile
              95              100             105

Gln Ser Leu Arg Ser Arg Leu Asp Glu Asn Thr Ile Pro Pro Leu
              110             115             120

Ser Val His Asp Ala Ser Asp Lys Asn Val Gln Arg Leu His Arg
```

236.

Leu Trp Glu Glu Glu Val Ser Arg Arg Gly Ile Glu Lys Ala Ser
              140   145   150

Val Leu Leu Val Met Leu Arg Phe Gln Arg Thr Arg Leu Ile Phe
              155   160   165

Asp Ala Leu Leu Gly Ile Cys Phe Cys Ile Ala Ser Val Leu Gly
              170   175   180

Pro Ile Leu Ile Ile Pro Lys Ile Leu Glu Tyr Ser Glu Glu Gln
              185   190   195

Leu Gly Asn Val Val His Gly Val Gly Leu Cys Phe Ala Leu Phe
              200   205   210

Leu Ser Glu Cys Val Lys Ser Leu Ser Phe Ser Ser Ser Trp Ile
              215   220   225

Ile Asn Gln Arg Thr Ala Ile Arg Phe Arg Ala Ala Val Ser Ser
              230   235   240

Phe Ala Phe Glu Lys Leu Ile Gln Phe Lys Ser Val Ile His Ile
              245   250   255

Thr Ser Gly Glu Ala Ile Ser Phe Phe Thr Gly Asp Val Asn Tyr
              260   265   270

Leu Phe Glu Gly Val Cys Tyr Gly Pro Leu Val Leu Ile Thr Cys
              275   280   285

Ala Ser Leu Val Ile Cys Ser Ile Ser Ser Tyr Phe Ile Ile Gly
              290   295   300

Tyr Thr Ala Phe Ile Ala Ile Leu Cys Tyr Pro Leu Val Phe Pro
              305   310   315

Leu Glu Val Phe Met Thr Arg Met Ala Val Lys Ala Gln His His
              320   325   330

Thr Ser Glu Val Ser Asp Gln Arg Ile Arg Val Thr Ser Glu Val
              335   340   345

Leu Thr Cys Ile Lys Leu Ile Lys Met Tyr Thr Trp Glu Lys Pro
              350   355   360

Phe Ala Lys Ile Ile Glu Asp Leu Arg Arg Lys Glu Arg Lys Leu
              365   370   375

Leu Glu Lys Cys Gly Leu Val Gln Ser Leu Thr Ser Ile Thr Leu
              380   385   390

Phe Ile Ile Pro Ala Val Ala Thr Ala Val Trp Val Leu Ile His
              395   400   405

Thr Ser Leu Lys Leu Lys Leu Thr Ala Ser Met Ala Phe Ser Met
              410   415   420

```
Leu Ala Ser Leu Asn Leu Leu Arg Leu Ser Val Phe Phe Val Pro
                425             430                 435

Ile Ala Val Lys Gly Leu Thr Asn Ser Lys Ser Ala Val Met Arg
                440             445                 450

Phe Lys Lys Phe Phe Leu Gln Glu Ser Pro Val Phe Tyr Val Gln
                455             460                 465

Thr Leu Gln Asp Pro Ser Lys Ala Leu Val Phe Glu Glu Ala Thr
                470             475                 480

Leu Ser Trp Gln Gln Thr Cys Pro Gly Ile Val Asn Gly Ala Leu
                485             490                 495

Glu Leu Glu Arg Asn Gly His Ala Ser Glu Gly Met Thr Arg Pro
                500             505                 510

Arg Asp Ala Leu Gly Pro Glu Glu Gly Asn Ser Leu Gly Pro
                515             520                 525

Glu Leu His Lys Ile Asn Leu Val Val Ser Lys Gly Met Met Leu
                530             535                 540

Gly Val Cys Gly Asn Thr Gly Ser Gly Lys Ser Ser Leu Leu Ser
                545             550                 555

Ala Ile Leu Glu Glu Met His Leu Leu Glu Gly Ser Val Gly Val
                560             565                 570

Gln Gly Ser Leu Ala Tyr Val Pro Gln Gln Ala Trp Ile Val Ser
                575             580                 585

Gly Asn Ile Arg Glu Asn Ile Leu Met Gly Gly Ala Tyr Asp Lys
                590             595                 600

Ala Arg Tyr Leu Gln Val Leu His Cys Cys Ser Leu Asn Arg Asp
                605             610                 615

Leu Glu Leu Leu Pro Phe Gly Asp Met Thr Glu Ile Gly Glu Arg
                620             625                 630

Gly Pro Asn Leu Ser Gly Gly Gln Lys Gln Arg Ile Ser Leu Ala
                635             640                 645

Arg Ala Val Tyr Ser Asp Arg Gln Ile Tyr Leu Leu Asp Asp Pro
                650             655                 660

Leu Ser Ala Val Asp Ala His Val Gly Lys His Ile Phe Glu Glu
                665             670                 675

Cys Ile Lys Lys Thr Leu Arg Gly Lys Thr Val Val Gln Val Thr
                680             685                 690

His Gln Leu Gln Tyr Leu Glu Phe Cys Gly Gln Val Ile Leu Leu
                695             700                 705

Glu Asn Gly Lys Ile Cys Glu Asn Gly Thr His Ser Glu Leu Met
```

238

```
                710                      715                      720
Gln Lys Lys Gly Lys Tyr Ala Gln Leu Ile Gln Lys Met His Lys
                725                      730                      735
Glu Ala Thr Ser Asp Met Leu Gln Asp Thr Ala Lys Ile Ala Glu
                740                      745                      750
Lys Pro Lys Val Glu Ser Gln Ala Leu Ala Thr Ser Leu Glu Glu
                755                      760                      765
Ser Leu Asn Gly Asn Ala Val Pro Glu His Gln Leu Thr Gln Glu
                770                      775                      780
Glu Glu Met Glu Glu Gly Ser Leu Ser Trp Arg Val Tyr His His
                785                      790                      795
Tyr Ile Gln Ala Ala Gly Gly Tyr Met Val Ser Cys Ile Ile Phe
                800                      805                      810
Phe Phe Val Val Leu Ile Val Phe Leu Thr Ile Phe Ser Phe Trp
                815                      820                      825
Trp Leu Ser Tyr Trp Leu Glu Gln Gly Ser Gly Thr Asn Ser Ser
                830                      835                      840
Arg Glu Ser Asn Gly Thr Met Ala Asp Leu Gly Asn Ile Ala Asp
                845                      850                      855
Asn Pro Gln Leu Ser Phe Tyr Gln Leu Val Tyr Gly Leu Asn Ala
                860                      865                      870
Leu Leu Leu Ile Cys Val Gly Val Cys Ser Ser Gly Ile Phe Thr
                875                      880                      885
Lys Val Thr Arg Lys Ala Ser Thr Ala Leu His Asn Lys Leu Phe
                890                      895                      900
Asn Lys Val Phe Arg Cys Pro Met Ser Phe Phe Asp Thr Ile Pro
                905                      910                      915
Ile Gly Arg Leu Leu Asn Cys Phe Ala Gly Asp Leu Glu Gln Leu
                920                      925                      930
Asp Gln Leu Leu Pro Ile Phe Ser Glu Gln Phe Leu Val Leu Ser
                935                      940                      945
Leu Met Val Ile Ala Val Leu Leu Ile Val Ser Val Leu Ser Pro
                950                      955                      960
Tyr Ile Leu Leu Met Gly Ala Ile Ile Met Val Ile Cys Phe Ile
                965                      970                      975
Tyr Tyr Met Met Phe Lys Glu Ala Ile Gly Val Phe Lys Arg Leu
                980                      985                      990
Glu Asn Tyr Ser Arg Ser Pro Leu Phe Ser His Ile Leu Asn Ser
                995                      1000                     1005
```

239

Leu Gln Gly Leu Ser Ser Ile His Val Tyr Gly Lys Thr Glu Asp
                 1010   1015   1020

Phe Ile Ser Gln Phe Lys Arg Leu Thr Asp Ala Gln Asn Asn Tyr
                 1025   1030   1035

Leu Leu Leu Phe Leu Ser Ser Thr Arg Trp Met Ala Leu Arg Leu
                 1040   1045   1050

Glu Ile Met Thr Asn Leu Val Thr Leu Ala Val Ala Leu Phe Val
                 1055   1060   1065

Ala Phe Gly Ile Ser Ser Thr Pro Tyr Ser Phe Lys Val Met Ala
                 1070   1075   1080

Val Asn Ile Val Leu Gln Leu Ala Ser Ser Phe Gln Ala Thr Ala
                 1085   1090   1095

Arg Ile Gly Leu Glu Thr Glu Ala Gln Phe Thr Ala Val Glu Arg
                 1100   1105   1110

Ile Leu Gln Tyr Met Lys Met Cys Val Ser Glu Ala Pro Leu His
                 1115   1120   1125

Met Glu Gly Thr Ser Cys Pro Gln Gly Trp Pro Gln His Gly Glu
                 1130   1135   1140

Ile Ile Phe Gln Asp Tyr His Met Lys Tyr Arg Asp Asn Thr Pro
                 1145   1150   1155

Thr Val Leu His Gly Ile Asn Leu Thr Ile Arg Gly His Glu Val
                 1160   1165   1170

Val Gly Ile Val Gly Arg Thr Gly Ser Gly Lys Ser Ser Leu Gly
                 1175   1180   1185

Met Ala Leu Phe Arg Leu Val Glu Pro Met Ala Gly Arg Ile Leu
                 1190   1195   1200

Ile Asp Gly Val Asp Ile Cys Ser Ile Gly Leu Glu Asp Leu Arg
                 1205   1210   1215

Ser Lys Leu Ser Val Ile Pro Gln Asp Pro Val Leu Leu Ser Gly
                 1220   1225   1230

Thr Ile Arg Phe Asn Leu Asp Pro Phe Asp Arg His Thr Asp Gln
                 1235   1240   1245

Gln Ile Trp Asp Ala Leu Glu Arg Thr Phe Leu Thr Lys Ala Ile
                 1250   1255   1260

Ser Lys Phe Pro Lys Lys Leu His Thr Asp Val Val Glu Asn Gly
                 1265   1270   1275

Gly Asn Phe Ser Val Gly Glu Arg Gln Leu Leu Cys Ile Ala Arg
                 1280   1285   1290

Ala Val Leu Arg Asn Ser Lys Ile Ile Leu Ile Asp Glu Ala Thr

240

Ala Ser Ile Asp Met Glu Thr Asp Thr Leu Ile Gln Arg Thr Ile
            1310   1315   1320

Arg Glu Ala Phe Gln Gly Cys Thr Val Leu Val Ile Ala His Arg
            1325   1330   1335

Val Thr Thr Val Leu Asn Cys Asp Arg Ile Leu Val Met Gly Asn
            1340   1345   1350

Gly Lys Val Val Glu Phe Asp Arg Pro Glu Val Leu Arg Lys Lys
            1355   1360   1365

Pro Gly Ser Leu Phe Ala Ala Leu Met Ala Thr Ala Thr Ser Ser
            1370   1375   1380

Leu Arg

<210> 129
<211> 364
<212> PRT
<213> Homo sapien

<400> 129
Met Ser Val Met Val Val Arg Lys Lys Val Thr Arg Lys Trp Glu
 1   5   10   15

Lys Leu Pro Gly Arg Asn Thr Phe Cys Cys Asp Gly Arg Val Met
            20   25   30

Met Ala Arg Gln Lys Gly Ile Phe Tyr Leu Thr Leu Phe Leu Ile
            35   40   45

Leu Gly Thr Cys Thr Leu Phe Phe Ala Phe Glu Cys Arg Tyr Leu
            50   55   60

Ala Val Gln Leu Ser Pro Ala Ile Pro Val Phe Ala Ala Met Leu
            65   70   75

Phe Leu Phe Ser Met Ala Thr Leu Leu Arg Thr Ser Phe Ser Asp
            80   85   90

Pro Gly Val Ile Pro Arg Ala Leu Pro Asp Glu Ala Ala Phe Ile
            95   100   105

Glu Met Glu Ile Glu Ala Thr Asn Gly Ala Val Pro Gln Gly Gln
            110   115   120

Arg Pro Pro Pro Arg Ile Lys Asn Phe Gln Ile Asn Asn Gln Ile
            125   130   135

Val Lys Leu Lys Tyr Cys Tyr Thr Cys Lys Ile Phe Arg Pro Pro
            140   145   150

Arg Ala Ser His Cys Ser Ile Cys Asp Asn Cys Val Glu Arg Phe
            155   160   165

241

```
Asp His His Cys Pro Trp Val Gly Asn Cys Val Gly Lys Arg Asn
              170             175             180

Tyr Arg Tyr Phe Tyr Leu Phe Ile Leu Ser Leu Ser Leu Leu Thr
              185             190             195

Ile Tyr Val Phe Ala Phe Asn Ile Val Tyr Val Ala Leu Lys Ser
              200             205             210

Leu Lys Ile Gly Phe Leu Glu Thr Leu Lys Glu Thr Pro Gly Thr
              215             220             225

Val Leu Glu Val Leu Ile Cys Phe Phe Thr Leu Trp Ser Val Val
              230             235             240

Gly Leu Thr Gly Phe His Thr Phe Leu Val Ala Leu Asn Gln Thr
              245             250             255

Thr Asn Glu Asp Ile Lys Gly Ser Trp Thr Gly Lys Asn Arg Val
              260             265             270

Gln Asn Pro Tyr Ser His Gly Asn Ile Val Lys Asn Cys Cys Glu
              275             280             285

Val Leu Cys Gly Pro Leu Pro Pro Ser Val Leu Asp Arg Arg Gly
              290             295             300

Ile Leu Pro Leu Glu Glu Ser Gly Ser Arg Pro Pro Ser Thr Gln
              305             310             315

Glu Thr Ser Ser Ser Leu Leu Pro Gln Ser Pro Ala Pro Thr Glu
              320             325             330

His Leu Asn Ser Asn Glu Met Pro Glu Asp Ser Ser Thr Pro Glu
              335             340             345

Glu Met Pro Pro Pro Glu Pro Pro Glu Pro Pro Gln Glu Ala Ala
              350             355             360

Glu Ala Glu Lys
```

```
<210> 130
<211> 204
<212> PRT
<213> Homo sapien

<400> 130
  Met Val Cys Gly Gly Phe Ala Cys Ser Lys Asn Cys Leu Cys Ala
   1               5              10              15

  Leu Asn Leu Leu Tyr Thr Leu Val Ser Leu Leu Leu Ile Gly Ile
                 20              25              30

  Ala Ala Trp Gly Ile Gly Phe Gly Leu Ile Ser Ser Leu Arg Val
                 35              40              45

  Val Gly Val Val Ile Ala Val Gly Ile Phe Leu Phe Leu Ile Ala
```

Leu Val Gly Leu Ile Gly Ala Val Lys His His Gln Val Leu Leu
　　　　　　　65　　　　　　　　　70　　　　　　　75

Phe Phe Tyr Met Ile Ile Leu Leu Leu Val Phe Ile Val Gln Phe
　　　　　　　80　　　　　　　　　85　　　　　　　90

Ser Val Ser Cys Ala Cys Leu Ala Leu Asn Gln Glu Gln Gln Gly
　　　　　　　95　　　　　　　　　100　　　　　　　105

Gln Leu Leu Glu Val Gly Trp Asn Asn Thr Ala Ser Ala Arg Asn
　　　　　　　110　　　　　　　　115　　　　　　　120

Asp Ile Gln Arg Asn Leu Asn Cys Cys Gly Phe Arg Ser Val Asn
　　　　　　　125　　　　　　　　130　　　　　　　135

Pro Asn Asp Thr Cys Leu Ala Ser Cys Val Lys Ser Asp His Ser
　　　　　　　140　　　　　　　　145　　　　　　　150

Cys Ser Pro Cys Ala Pro Ile Ile Gly Glu Tyr Ala Gly Glu Val
　　　　　　　155　　　　　　　　160　　　　　　　165

Leu Arg Phe Val Gly Gly Ile Gly Leu Phe Phe Ser Phe Thr Glu
　　　　　　　170　　　　　　　　175　　　　　　　180

Ile Leu Gly Val Trp Leu Thr Tyr Arg Tyr Arg Asn Gln Lys Asp
　　　　　　　185　　　　　　　　190　　　　　　　195

Pro Arg Ala Asn Pro Ser Ala Phe Leu
　　　　　　　200

<210> 131
<211> 359
<212> PRT
<213> Homo sapien

<400> 131
Met Lys Leu Gly Cys Val Leu Met Ala Trp Ala Leu Tyr Leu Ser
　1　　　　　　　5　　　　　　　　10　　　　　　　15

Leu Gly Val Leu Trp Val Ala Gln Met Leu Leu Ala Ala Ser Phe
　　　　　　　20　　　　　　　　25　　　　　　　30

Glu Thr Leu Gln Cys Glu Gly Pro Val Cys Thr Glu Glu Ser Ser
　　　　　　　35　　　　　　　　40　　　　　　　45

Cys His Thr Glu Asp Asp Leu Thr Asp Ala Arg Glu Ala Gly Phe
　　　　　　　50　　　　　　　　55　　　　　　　60

Gln Val Lys Ala Tyr Thr Phe Ser Glu Pro Phe His Leu Ile Val
　　　　　　　65　　　　　　　　70　　　　　　　75

Ser Tyr Asp Trp Leu Ile Leu Gln Gly Pro Ala Lys Pro Val Phe
　　　　　　　80　　　　　　　　85　　　　　　　90

Glu Gly Asp Leu Leu Val Leu Arg Cys Gln Ala Trp Gln Asp Trp
　　　　　　　95　　　　　　　　100　　　　　　　105

```
Pro Leu Thr Gln Val Thr Phe Tyr Arg Asp Gly Ser Ala Leu Gly
            110                 115                 120

Pro Pro Gly Pro Asn Arg Glu Phe Ser Ile Thr Val Val Gln Lys
            125                 130                 135

Ala Asp Ser Gly His Tyr His Cys Ser Gly Ile Phe Gln Ser Pro
            140                 145                 150

Gly Pro Gly Ile Pro Glu Thr Ala Ser Val Val Ala Ile Thr Val
            155                 160                 165

Gln Glu Leu Phe Pro Ala Pro Ile Leu Arg Ala Val Pro Ser Ala
            170                 175                 180

Glu Pro Gln Ala Gly Ser Pro Met Thr Leu Ser Cys Gln Thr Lys
            185                 190                 195

Leu Pro Leu Gln Arg Ser Ala Ala Arg Leu Leu Phe Ser Phe Tyr
            200                 205                 210

Lys Asp Gly Arg Ile Val Gln Ser Arg Gly Leu Ser Ser Glu Phe
            215                 220                 225

Gln Ile Pro Thr Ala Ser Glu Asp His Ser Gly Ser Tyr Trp Cys
            230                 235                 240

Glu Ala Ala Thr Glu Asp Asn Gln Val Trp Lys Gln Ser Pro Gln
            245                 250                 255

Leu Glu Ile Arg Val Gln Gly Ala Ser Ser Ser Ala Ala Pro Pro
            260                 265                 270

Thr Leu Asn Pro Ala Pro Gln Lys Ser Ala Ala Pro Gly Thr Ala
            275                 280                 285

Pro Glu Glu Ala Pro Gly Pro Leu Pro Pro Pro Pro Thr Pro Ser
            290                 295                 300

Ser Glu Asp Pro Gly Phe Ser Ser Pro Leu Gly Met Pro Asp Pro
            305                 310                 315

His Leu Tyr His Gln Met Gly Leu Leu Leu Lys His Met Gln Asp
            320                 325                 330

Val Arg Val Leu Leu Gly His Leu Leu Met Glu Leu Arg Glu Leu
            335                 340                 345

Ser Gly His Gln Lys Pro Gly Thr Thr Lys Ala Thr Ala Glu
            350                 355
```

<210> 132
<211> 420
<212> PRT
<213> Homo sapien

<400> 132
Met Pro Gly Gly Cys Ser Arg Gly Pro Ala Ala Gly Asp Gly Arg

244

```
    1              5                  10                   15

Leu Arg Leu Ala Arg Leu Ala Leu Val Leu Leu Gly Trp Val Ser
                20                  25                   30

Ser Ser Ser Pro Thr Ser Ser Ala Ser Ser Phe Ser Ser Ser Ala
                35                  40                   45

Pro Phe Leu Ala Ser Ala Val Ser Ala Gln Pro Pro Leu Pro Asp
                50                  55                   60

Gln Cys Pro Ala Leu Cys Glu Cys Ser Glu Ala Ala Arg Thr Val
                65                  70                   75

Lys Cys Val Asn Arg Asn Leu Thr Glu Val Pro Thr Asp Leu Pro
                80                  85                   90

Ala Tyr Val Arg Asn Leu Phe Leu Thr Gly Asn Gln Leu Ala Val
                95                 100                  105

Leu Pro Ala Gly Ala Phe Ala Arg Arg Pro Pro Leu Ala Glu Leu
               110                 115                  120

Ala Ala Leu Asn Leu Ser Gly Ser Arg Leu Asp Glu Val Arg Ala
               125                 130                  135

Gly Ala Phe Glu His Leu Pro Ser Leu Arg Gln Leu Asp Leu Ser
               140                 145                  150

His Asn Pro Leu Ala Asp Leu Ser Pro Phe Ala Phe Ser Gly Ser
               155                 160                  165

Asn Ala Ser Val Ser Ala Pro Ser Pro Leu Val Glu Leu Ile Leu
               170                 175                  180

Asn His Ile Val Pro Pro Glu Asp Glu Arg Gln Asn Arg Ser Phe
               185                 190                  195

Glu Gly Met Val Val Ala Ala Leu Leu Ala Gly Arg Ala Leu Gln
               200                 205                  210

Gly Leu Arg Arg Leu Glu Leu Ala Ser Asn His Phe Leu Tyr Leu
               215                 220                  225

Pro Arg Asp Val Leu Ala Gln Leu Pro Ser Leu Arg His Leu Asp
               230                 235                  240

Leu Ser Asn Asn Ser Leu Val Ser Leu Thr Tyr Val Ser Phe Arg
               245                 250                  255

Asn Leu Thr His Leu Glu Ser Leu His Leu Glu Asp Asn Ala Leu
               260                 265                  270

Lys Val Leu His Asn Gly Thr Leu Ala Glu Leu Gln Gly Leu Pro
               275                 280                  285

His Ile Arg Val Phe Leu Asp Asn Asn Pro Trp Val Cys Asp Cys
               290                 295                  300


                              245
```

His Met Ala Asp Met Val Thr Trp Leu Lys Glu Thr Glu Val Val
            305   310   315

Gln Gly Lys Asp Arg Leu Thr Cys Ala Tyr Pro Glu Lys Met Arg
            320   325   330

Asn Arg Val Leu Leu Glu Leu Asn Ser Ala Asp Leu Asp Cys Asp
            335   340   345

Pro Ile Leu Pro Pro Ser Leu Gln Thr Ser Tyr Val Phe Leu Gly
            350   355   360

Ile Val Leu Ala Leu Ile Gly Ala Ile Phe Leu Leu Val Leu Tyr
            365   370   375

Leu Asn Arg Lys Gly Ile Lys Lys Trp Met His Asn Ile Arg Asp
            380   385   390

Ala Cys Arg Asp His Met Glu Gly Tyr His Tyr Arg Tyr Glu Ile
            395   400   405

Asn Ala Asp Pro Arg Leu Thr Asn Leu Ser Ser Asn Ser Asp Val
            410   415   420

<210> 133
<211> 314
<212> PRT
<213> Homo sapien

<400> 133
Met Ala Pro Pro Gln Val Leu Ala Phe Gly Leu Leu Leu Ala Ala
  1   5   10   15

Ala Thr Ala Thr Phe Ala Ala Ala Gln Glu Glu Cys Val Cys Glu
            20   25   30

Asn Tyr Lys Leu Ala Val Asn Cys Phe Val Asn Asn Asn Arg Gln
            35   40   45

Cys Gln Cys Thr Ser Val Gly Ala Gln Asn Thr Val Ile Cys Ser
            50   55   60

Lys Leu Ala Ala Lys Cys Leu Val Met Lys Ala Glu Met Asn Gly
            65   70   75

Ser Lys Leu Gly Arg Arg Ala Lys Pro Glu Gly Ala Leu Gln Asn
            80   85   90

Asn Asp Gly Leu Tyr Asp Pro Asp Cys Asp Glu Ser Gly Leu Phe
            95   100   105

Lys Ala Lys Gln Cys Asn Gly Thr Ser Thr Cys Trp Cys Val Asn
            110   115   120

Thr Ala Gly Val Arg Arg Thr Asp Lys Asp Thr Glu Ile Thr Cys
            125   130   135

Ser Glu Arg Val Arg Thr Tyr Trp Ile Ile Ile Glu Leu Lys His

Lys Ala Arg Glu Lys Pro Tyr Asp Ser Lys Ser Leu Arg Thr Ala
                155   160   165

Leu Gln Lys Glu Ile Thr Thr Arg Tyr Gln Leu Asp Pro Lys Phe
                170   175   180

Ile Thr Ser Ile Leu Tyr Glu Asn Asn Val Ile Thr Ile Asp Leu
                185   190   195

Val Gln Asn Ser Ser Gln Lys Thr Gln Asn Asp Val Asp Ile Ala
                200   205   210

Asp Val Ala Tyr Tyr Phe Glu Lys Asp Val Lys Gly Glu Ser Leu
                215   220   225

Phe His Ser Lys Lys Met Asp Leu Thr Val Asn Gly Glu Gln Leu
                230   235   240

Asp Leu Asp Pro Gly Gln Thr Leu Ile Tyr Tyr Val Asp Glu Lys
                245   250   255

Ala Pro Glu Phe Ser Met Gln Gly Leu Lys Ala Gly Val Ile Ala
                260   265   270

Val Ile Val Val Val Val Ile Ala Val Val Ala Gly Ile Val Val
                275   280   285

Leu Val Ile Ser Arg Lys Lys Arg Met Ala Lys Tyr Glu Lys Ala
                290   295   300

Glu Ile Lys Glu Met Gly Glu Met His Arg Glu Leu Asn Ala
                305   310

<210> 134
<211> 1092
<212> PRT
<213> Homo sapien

<400> 134
 Met Pro Cys Gly Phe Ser Pro Ser Pro Val Ala His His Leu Val
   1   5   10   15

 Pro Gly Pro Pro Asp Thr Pro Ala Gln Gln Leu Arg Cys Gly Trp
                20   25   30

 Thr Val Gly Gly Trp Leu Leu Ser Leu Val Arg Gly Leu Leu Pro
                35   40   45

 Cys Leu Pro Pro Gly Ala Arg Thr Ala Glu Gly Pro Ile Met Val
                50   55   60

 Leu Ala Gly Pro Leu Ala Val Ser Leu Leu Leu Pro Ser Leu Thr
                65   70   75

 Leu Leu Val Ser His Leu Ser Ser Ser Gln Asp Val Ser Ser Glu
                80   85   90

```
Pro Ser Ser Glu Gln Gln Leu Cys Ala Leu Ser Lys His Pro Thr
            95                  100                 105

Val Ala Phe Glu Asp Leu Gln Pro Trp Val Ser Asn Phe Thr Tyr
            110                 115                 120

Pro Gly Ala Arg Asp Phe Ser Gln Leu Ala Leu Asp Pro Ser Gly
            125                 130                 135

Asn Gln Leu Ile Val Gly Ala Arg Asn Tyr Leu Phe Arg Leu Ser
            140                 145                 150

Leu Ala Asn Val Ser Leu Leu Gln Ala Thr Glu Trp Ala Ser Ser
            155                 160                 165

Glu Asp Thr Arg Arg Ser Cys Gln Ser Lys Gly Lys Thr Glu Glu
            170                 175                 180

Glu Cys Gln Asn Tyr Val Arg Val Leu Ile Val Ala Gly Arg Lys
            185                 190                 195

Val Phe Met Cys Gly Thr Asn Ala Phe Ser Pro Met Cys Thr Ser
            200                 205                 210

Arg Gln Val Gly Asn Leu Ser Arg Thr Ile Glu Lys Ile Asn Gly
            215                 220                .225

Val Ala Arg Cys Pro Tyr Asp Pro Arg His Asn Ser Thr Ala Val
            230                 235                 240

Ile Ser Ser Gln Gly Glu Leu Tyr Ala Ala Thr Val Ile Asp Phe
            245                 250                 255

Ser Gly Arg Asp Pro Ala Ile Tyr Arg Ser Leu Gly Ser Gly Pro
            260                 265                 270

Pro Leu Arg Thr Ala Gln Tyr Asn Ser Lys Trp Leu Asn Glu Pro
            275                 280                 285

Asn Phe Val Ala Ala Tyr Asp Ile Gly Leu Phe Ala Tyr Phe Phe
            290                 295                 300

Leu Arg Glu Asn Ala Val Glu His Asp Cys Gly Arg Thr Val Tyr
            305                 310                 315

Ser Arg Val Ala Arg Val Cys Lys Asn Asp Val Gly Gly Arg Phe
            320                 325                 330

Leu Leu Glu Asp Thr Trp Thr Thr Phe Met Lys Ala Arg Leu Asn
            335                 340                 345

Cys Ser Arg Pro Gly Glu Val Pro Phe Tyr Tyr Asn Glu Leu Gln
            350                 355                 360

Ser Ala Phe His Leu Pro Glu Gln Asp Leu Ile Tyr Gly Val Phe
            365                 370                 375

Thr Thr Asn Val Asn Ser Ile Ala Ala Ser Ala Val Cys Ala Phe
```

248

Asn Leu Ser Ala Ile Ser Gln Ala Phe Asn Gly Pro Phe Arg Tyr
                395   400   405

Gln Glu Asn Pro Arg Ala Ala Trp Leu Pro Ile Ala Asn Pro Ile
                410   415   420

Pro Asn Phe Gln Cys Gly Thr Leu Pro Glu Thr Gly Pro Asn Glu
                425   430   435

Asn Leu Thr Glu Arg Ser Leu Gln Asp Ala Gln Arg Leu Phe Leu
                440   445   450

Met Ser Glu Ala Val Gln Pro Val Thr Pro Glu Pro Cys Val Thr
                455   460   465

Gln Asp Ser Val Arg Phe Ser His Leu Val Val Asp Leu Val Gln
                470   475   480

Ala Lys Asp Thr Leu Tyr His Val Leu Tyr Ile Gly Thr Glu Ser
                485   490   495

Gly Thr Ile Leu Lys Ala Leu Ser Thr Ala Ser Arg Ser Leu His
                500   505   510

Gly Cys Tyr Leu Glu Glu Leu His Val Leu Pro Pro Gly Arg Arg
                515   520   525

Glu Pro Leu Arg Ser Leu Arg Ile Leu His Ser Ala Arg Ala Leu
                530   535   540

Phe Val Gly Leu Arg Asp Gly Val Leu Arg Val Pro Leu Glu Arg
                545   550   555

Cys Ala Ala Tyr Arg Ser Gln Gly Ala Cys Leu Gly Ala Arg Asp
                560   565   570

Pro Tyr Cys Gly Trp Asp Gly Lys Gln Gln Arg Cys Ser Thr Leu
                575   580   585

Glu Asp Ser Ser Asn Met Ser Leu Trp Thr Gln Asn Ile Thr Ala
                590   595   600

Cys Pro Val Arg Asn Val Thr Arg Asp Gly Gly Phe Gly Pro Trp
                605   610   615

Ser Pro Trp Gln Pro Cys Glu His Leu Asp Gly Asp Asn Ser Gly
                620   625   630

Ser Cys Leu Cys Arg Ala Arg Ser Cys Asp Ser Pro Arg Pro Arg
                635   640   645

Cys Gly Gly Leu Asp Cys Leu Gly Pro Ala Ile His Ile Ala Asn
                650   655   660

Cys Ser Arg Asn Gly Ala Trp Thr Pro Trp Ser Ser Trp Ala Leu
                665   670   675

249

```
Cys Ser Thr Ser Cys Gly Ile Gly Phe Gln Val Arg Gln Arg Ser
            680                 685                 690

Cys Ser Asn Pro Ala Pro Arg His Gly Gly Arg Ile Phe Val Gly
            695                 700                 705

Lys Ser Arg Glu Glu Arg Phe Cys Asn Glu Asn Thr Pro Cys Pro
            710                 715                 720

Val Pro Ile Phe Trp Ala Ser Trp Gly Ser Trp Ser Lys Cys Ser
            725                 730                 735

Ser Asn Cys Gly Gly Gly Met Gln Ser Arg Arg Arg Ala Cys Glu
            740                 745                 750

Asn Gly Asn Ser Cys Leu Gly Cys Gly Glu Phe Lys Thr Cys Asn
            755                 760                 765

Pro Glu Gly Cys Pro Glu Val Arg Arg Asn Thr Pro Trp Thr Pro
            770                 775                 780

Trp Leu Pro Val Asn Val Thr Gln Gly Gly Ala Arg Gln Glu Gln
            785                 790                 795

Arg Phe Arg Phe Thr Cys Arg Ala Pro Leu Ala Asp Pro His Gly
            800                 805                 810

Leu Gln Phe Gly Arg Arg Arg Thr Glu Thr Arg Thr Cys Pro Ala
            815                 820                 825

Asp Gly Ser Gly Ser Cys Asp Thr Asp Ala Leu Val Glu Val Leu
            830                 835                 840

Leu Arg Ser Gly Ser Thr Ser Pro His Thr Val Ser Gly Gly Trp
            845                 850                 855

Ala Ala Trp Gly Pro Trp Ser Ser Cys Ser Arg Asp Cys Glu Leu
            860                 865                 870

Gly Phe Arg Val Arg Lys Arg Thr Cys Thr Asn Pro Glu Pro Arg
            875                 880                 885

Asn Gly Gly Leu Pro Cys Val Gly Asp Ala Ala Glu Tyr Gln Asp
            890                 895                 900

Cys Asn Pro Gln Ala Cys Pro Val Arg Gly Ala Trp Ser Cys Trp
            905                 910                 915

Thr Ser Trp Ser Pro Cys Ser Ala Ser Cys Gly Gly Gly His Tyr
            920                 925                 930

Gln Arg Thr Arg Ser Cys Thr Ser Pro Ala Pro Ser Pro Gly Glu
            935                 940                 945

Asp Ile Cys Leu Gly Leu His Thr Glu Glu Ala Leu Cys Ala Thr
            950                 955                 960

Gln Ala Cys Pro Gly Trp Ser Pro Trp Ser Glu Trp Ser Lys Cys
```

250

```
                 965                     970                     975
Thr Asp Asp Gly Ala Gln Ser Arg Ser Arg His Cys Glu Glu Leu
             980                     985                     990
Leu Pro Gly Ser Ser Ala Cys Ala Gly Asn Ser Ser Gln Ser Arg
             995                    1000                    1005
Pro Cys Pro Tyr Ser Glu Ile Pro Val Ile Leu Pro Ala Ser Ser
            1010                    1015                    1020
Met Glu Glu Ala Thr Asp Cys Ala Gly Lys Arg Asn Arg Thr Tyr
            1025                    1030                    1035
Leu Met Leu Arg Ser Ser Gln Pro Ser Ser Thr Pro Leu Gln Ser
            1040                    1045                    1050
Leu Asp Ser Phe His Ile Leu Leu Gln Thr Ala Lys Leu Cys Trp
            1055                    1060                    1065
Gly Pro His Cys Phe Glu Met Gly Ser Ile Ser Ser Thr Trp Trp
            1070                    1075                    1080
Pro Arg Ala Ser Pro Ala Ser Trp Ala Leu Gly Ser
            1085                    1090
```

<210> 135
<211> 260
<212> PRT
<213> Homo sapien

<400> 135
```
Met Ala Lys Asp Asn Ser Thr Val Arg Cys Phe Gln Gly Leu Leu
  1               5                    10                      15
Ile Phe Gly Asn Val Ile Ile Gly Cys Cys Gly Ile Ala Leu Thr
               20                    25                      30
Ala Glu Cys Ile Phe Phe Val Ser Asp Gln His Ser Leu Tyr Pro
               35                    40                      45
Leu Leu Glu Ala Thr Asp Asn Asp Ile Tyr Gly Ala Ala Trp
               50                    55                      60
Ile Gly Ile Phe Val Gly Ile Cys Leu Phe Cys Leu Ser Val Leu
               65                    70                      75
Gly Ile Val Gly Ile Met Lys Ser Ser Arg Lys Ile Leu Leu Ala
               80                    85                      90
Tyr Phe Ile Leu Met Phe Ile Val Tyr Ala Phe Glu Val Ala Ser
               95                   100                     105
Cys Ile Thr Ala Ala Thr Gln Gln Asp Phe Phe Thr Pro Asn Leu
              110                   115                     120
Phe Leu Lys Gln Met Leu Glu Arg Tyr Gln Asn Asn Ser Pro Pro
              125                   130                     135
```

251

```
Asn Asn Asp Asp Gln Trp Lys Asn Asn Gly Val Thr Lys Thr Trp
            140                 145                 150

Asp Arg Leu Met Leu Gln Asp Asn Cys Cys Gly Val Asn Gly Pro
            155                 160                 165

Ser Asp Trp Gln Lys Tyr Thr Ser Ala Phe Arg Thr Glu Asn Asn
            170                 175                 180

Asp Ala Asp Tyr Pro Trp Pro Arg Gln Cys Cys Val Met Asn Asn
            185                 190                 195

Leu Lys Glu Pro Leu Asn Leu Glu Ala Cys Lys Leu Gly Val Pro
            200                 205                 210

Gly Phe Tyr His Asn Gln Gly Cys Tyr Glu Leu Ile Ser Gly Pro
            215                 220                 225

Met Asn Arg His Ala Trp Gly Val Ala Trp Phe Gly Phe Ala Ile
            230                 235                 240

Leu Cys Trp Thr Phe Trp Val Leu Leu Gly Thr Met Phe Tyr Trp
            245                 250                 255

Ser Arg Ile Glu Tyr
            260
```

<210> 136
<211> 289
<212> PRT
<213> Homo sapien

<400> 136
```
Met Phe Asp Lys Thr Arg Leu Pro Tyr Val Ala Leu Asp Val Leu
  1             5                 10                  15

Cys Val Leu Leu Ala Gly Leu Pro Phe Ala Ile Phe Thr Ser Arg
            20                  25                  30

His Ile Thr Ser Arg His Thr Pro Phe Gln Arg Gly Val Phe Cys
            35                  40                  45

Asn Asp Glu Ser Ile Lys Tyr Pro Tyr Lys Glu Asp Thr Ile Pro
            50                  55                  60

Tyr Ala Leu Leu Gly Gly Ile Ile Ile Pro Phe Ser Ile Ile Val
            65                  70                  75

Ile Ile Leu Gly Glu Thr Leu Ser Val Tyr Cys Asn Leu Leu His
            80                  85                  90

Ser Asn Ser Phe Ile Arg Asn Asn Tyr Ile Ala Thr Ile Tyr Lys
            95                  100                 105

Ala Ile Gly Thr Phe Leu Phe Gly Ala Ala Ala Ser Gln Ser Leu
            110                 115                 120

Thr Asp Ile Ala Lys Tyr Ser Ile Gly Arg Leu Arg Pro His Phe
```

Leu Asp Val Cys Asp Pro Asp Trp Ser Lys Ile Asn Cys Ser Asp
                140   145   150

Gly Tyr Ile Glu Tyr Tyr Ile Cys Arg Gly Asn Ala Glu Arg Val
                155   160   165

Lys Glu Gly Arg Leu Ser Phe Tyr Ser Gly His Ser Ser Phe Ser
                170   175   180

Met Tyr Cys Met Leu Phe Val Ala Leu Tyr Leu Gln Ala Arg Met
                185   190   195

Lys Gly Asp Trp Ala Arg Leu Leu Arg Pro Thr Leu Gln Phe Gly
                200   205   210

Leu Val Ala Val Ser Ile Tyr Val Gly Leu Ser Arg Val Ser Asp
                215   220   225

Tyr Lys His His Trp Ser Asp Val Leu Thr Gly Leu Ile Gln Gly
                230   235   240

Ala Leu Val Ala Ile Leu Val Ala Val Tyr Val Ser Asp Phe Phe
                245   250   255

Lys Glu Arg Thr Ser Phe Lys Glu Arg Lys Glu Glu Asp Ser His
                260   265   270

Thr Thr Leu His Glu Thr Pro Thr Thr Gly Asn His Tyr Pro Ser
                275   280   285

Asn His Gln Pro

<210> 137
<211> 734
<212> PRT
<213> Homo sapien

<400> 137
 Met Leu Leu Trp Leu Leu Leu Leu Ile Leu Thr Pro Gly Arg Glu
  1   5   10   15

 Gln Ser Gly Val Ala Pro Lys Ala Val Leu Leu Leu Asn Pro Pro
                20   25   30

 Trp Ser Thr Ala Phe Lys Gly Glu Lys Val Ala Leu Ile Cys Ser
                35   40   45

 Ser Ile Ser His Ser Leu Ala Gln Gly Asp Thr Tyr Trp Tyr His
                50   55   60

 Asp Glu Lys Leu Leu Lys Ile Lys His Asp Lys Ile Gln Ile Thr
                65   70   75

 Glu Pro Gly Asn Tyr Gln Cys Lys Thr Arg Gly Ser Ser Leu Ser
                80   85   90

```
Asp Ala Val His Val Glu Phe Ser Pro Asp Trp Leu Ile Leu Gln
              95              100                 105

Ala Leu His Pro Val Phe Glu Gly Asp Asn Val Ile Leu Arg Cys
              110                 115                 120

Gln Gly Lys Asp Asn Lys Asn Thr His Gln Lys Val Tyr Tyr Lys
              125                 130                 135

Asp Gly Lys Gln Leu Pro Asn Ser Tyr Asn Leu Glu Lys Ile Thr
              140                 145                 150

Val Asn Ser Val Ser Arg Asp Asn Ser Lys Tyr His Cys Thr Ala
              155                 160                 165

Tyr Arg Lys Phe Tyr Ile Leu Asp Ile Glu Val Thr Ser Lys Pro
              170                 175                 180

Leu Asn Ile Gln Val Gln Glu Leu Phe Leu His Pro Val Leu Arg
              185                 190                 195

Ala Ser Ser Ser Thr Pro Ile Glu Gly Ser Pro Met Thr Leu Thr
              200                 205                 210

Cys Glu Thr Gln Leu Ser Pro Gln Arg Pro Asp Val Gln Leu Gln
              215                 220                 225

Phe Ser Leu Phe Arg Asp Ser Gln Thr Leu Gly Leu Gly Trp Ser
              230                 235                 240

Arg Ser Pro Arg Leu Gln Ile Pro Ala Met Trp Thr Glu Asp Ser
              245                 250                 255

Gly Ser Tyr Trp Cys Glu Val Glu Thr Val Thr His Ser Ile Lys
              260                 265                 270

Lys Arg Ser Leu Arg Ser Gln Ile Arg Val Gln Arg Val Pro Val
              275                 280                 285

Ser Asn Val Asn Leu Glu Ile Arg Pro Thr Gly Gly Gln Leu Ile
              290                 295                 300

Glu Gly Glu Asn Met Val Leu Ile Cys Ser Val Ala Gln Gly Ser
              305                 310                 315

Gly Thr Val Thr Phe Ser Trp His Lys Glu Gly Arg Val Arg Ser
              320                 325                 330

Leu Gly Arg Lys Thr Gln Arg Ser Leu Leu Ala Glu Leu His Val
              335                 340                 345

Leu Thr Val Lys Glu Ser Asp Ala Gly Arg Tyr Tyr Cys Ala Ala
              350                 355                 360

Asp Asn Val His Ser Pro Ile Leu Ser Thr Trp Ile Arg Val Thr
              365                 370                 375

Val Arg Ile Pro Val Ser His Pro Val Leu Thr Phe Arg Ala Pro
```

254

Arg Ala His Thr Val Val Gly Asp Leu Leu Glu Leu His Cys Glu
                395   400   405

Ser Leu Arg Gly Ser Pro Pro Ile Leu Tyr Arg Phe Tyr His Glu
                410   415   420

Asp Val Thr Leu Gly Asn Ser Ser Ala Pro Ser Gly Gly Gly Ala
                425   430   435

Ser Phe Asn Leu Ser Leu Thr Ala Glu His Ser Gly Asn Tyr Ser
                440   445   450

Cys Asp Ala Asp Asn Gly Leu Gly Ala Gln His Ser His Gly Val
                455   460   465

Ser Leu Arg Val Thr Val Pro Val Ser Arg Pro Val Leu Thr Leu
                470   475   480

Arg Ala Pro Gly Ala Gln Ala Val Val Gly Asp Leu Leu Glu Leu
                485   490   495

His Cys Glu Ser Leu Arg Gly Ser Phe Pro Ile Leu Tyr Trp Phe
                500   505   510

Tyr His Glu Asp Asp Thr Leu Gly Asn Ile Ser Ala His Ser Gly
                515   520   525

Gly Gly Ala Ser Phe Asn Leu Ser Leu Thr Thr Glu His Ser Gly
                530   535   540

Asn Tyr Ser Cys Glu Ala Asp Asn Gly Leu Gly Ala Gln His Ser
                545   550   555

Lys Val Val Thr Leu Asn Val Thr Gly Thr Ser Arg Asn Arg Thr
                560   565   570

Gly Leu Thr Ala Ala Gly Ile Thr Gly Leu Val Leu Ser Ile Leu
                575   580   585

Val Leu Ala Ala Ala Ala Ala Leu Leu His Tyr Ala Arg Ala Arg
                590   595   600

Arg Lys Pro Gly Gly Leu Ser Ala Thr Gly Thr Ser Ser His Ser
                605   610   615

Pro Ser Glu Cys Gln Glu Pro Ser Ser Ser Arg Pro Ser Arg Ile
                620   625   630

Asp Pro Gln Glu Pro Thr His Ser Lys Pro Leu Ala Pro Met Glu
                635   640   645

Leu Glu Pro Met Tyr Ser Asn Val Asn Pro Gly Asp Ser Asn Pro
                650   655   660

Ile Tyr Ser Gln Ile Trp Ser Ile Gln His Thr Lys Glu Asn Ser
                665   670   675

255

```
Ala Asn Cys Pro Met Met His Gln Glu His Glu Glu Leu Thr Val
            680             685             690

Leu Tyr Ser Glu Leu Lys Lys Thr His Pro Asp Asp Ser Ala Gly
            695             700             705

Glu Ala Ser Ser Arg Gly Arg Ala His Glu Glu Asp Asp Glu Glu
            710             715             720

Asn Tyr Glu Asn Val Pro Arg Val Leu Leu Ala Ser Asp His
            725             730


<210> 138
<211> 251
<212> PRT
<213> Homo sapien

<400> 138
Met Glu Gly Gly Ala Ala Ala Ala Thr Pro Thr Ala Leu Pro Tyr
  1             5              10             15

Tyr Val Ala Phe Ser Gln Leu Leu Gly Leu Thr Leu Val Ala Met
            20             25             30

Thr Gly Ala Trp Leu Gly Leu Tyr Arg Gly Gly Ile Ala Trp Glu
            35             40             45

Ser Asp Leu Gln Phe Asn Ala His Pro Leu Cys Met Val Ile Gly
            50             55             60

Leu Ile Phe Leu Gln Gly Asn Ala Leu Leu Val Tyr Arg Val Phe
            65             70             75

Arg Asn Glu Ala Lys Arg Thr Thr Lys Val Leu His Gly Leu Leu
            80             85             90

His Ile Phe Ala Leu Val Ile Ala Leu Val Gly Leu Val Ala Val
            95             100            105

Phe Asp Tyr His Arg Lys Lys Gly Tyr Ala Asp Leu Tyr Ser Leu
            110            115            120

His Ser Trp Cys Gly Ile Leu Val Phe Val Leu Tyr Phe Val Gln
            125            130            135

Trp Leu Val Gly Phe Ser Phe Phe Leu Phe Pro Gly Ala Ser Phe
            140            145            150

Ser Leu Arg Ser Arg Tyr Arg Pro Gln His Ile Phe Phe Gly Ala
            155            160            165

Thr Ile Phe Leu Leu Pro Val Gly Thr Ala Leu Leu Gly Leu Lys
            170            175            180

Glu Ala Leu Leu Phe Asn Leu Gly Gly Lys Tyr Ser Ala Phe Glu
            185            190            195

Pro Glu Gly Val Leu Ala Asn Val Leu Gly Leu Leu Leu Ala Cys
```

```
Phe Gly Gly Ala Val Leu Tyr Ile Leu Thr Arg Ala Asp Trp Lys
                215                220                    225

Arg Pro Ser Gln Ala Glu Glu Gln Ala Leu Ser Met Asp Phe Lys
                230                235                    240

Thr Leu Arg Gln Gly Asp Ser Pro Gly Ser Gln
                245                250
```

<210> 139
<211> 391
<212> PRT
<213> Homo sapien

<400> 139

```
Met Arg Gln Leu Cys Arg Gly Arg Val Leu Gly Ile Ser Val Ala
  1              5                 10                    15

Ile Ala His Gly Val Phe Ser Gly Ser Leu Asn Ile Leu Leu Lys
                20                 25                    30

Phe Leu Ile Ser Arg Tyr Gln Phe Ser Phe Leu Thr Leu Val Gln
                35                 40                    45

Cys Leu Thr Ser Ser Thr Ala Ala Leu Ser Leu Glu Leu Leu Arg
                50                 55                    60

Arg Leu Gly Leu Ile Ala Val Pro Pro Phe Gly Leu Ser Leu Ala
                65                 70                    75

Arg Ser Phe Ala Gly Val Ala Val Leu Ser Thr Leu Gln Ser Ser
                80                 85                    90

Leu Thr Leu Trp Ser Leu Arg Gly Leu Ser Leu Pro Met Tyr Val
                95                 100                   105

Val Phe Lys Arg Cys Leu Pro Leu Val Thr Met Leu Ile Gly Val
                110                115                   120

Leu Val Leu Lys Asn Gly Ala Pro Ser Pro Gly Val Leu Ala Ala
                125                130                   135

Val Leu Ile Thr Thr Cys Gly Ala Ala Leu Ala Gly Ala Gly Asp
                140                145                   150

Leu Thr Gly Asp Pro Ile Gly Tyr Val Thr Gly Val Leu Ala Val
                155                160                   165

Leu Val His Ala Ala Tyr Leu Val Leu Ile Gln Lys Ala Ser Ala
                170                175                   180

Asp Thr Glu His Gly Pro Leu Thr Ala Gln Tyr Val Ile Ala Val
                185                190                   195

Ser Ala Thr Pro Leu Leu Val Ile Cys Ser Phe Ala Ser Thr Asp
                200                205                   210
```

```
Ser Ile His Ala Trp Thr Phe Pro Gly Trp Lys Asp Pro Ala Met
             215             220             225

Val Cys Ile Phe Val Ala Cys Ile Leu Ile Gly Cys Ala Met Asn
             230             235             240

Phe Thr Thr Leu His Cys Thr Tyr Ile Asn Ser Ala Val Thr Thr
             245             250             255

Ser Leu Phe Ile Ala Gly Val Val Val Asn Thr Leu Gly Ser Ile
             260             265             270

Ile Tyr Cys Val Ala Lys Phe Met Glu Thr Arg Lys Gln Ser Asn
             275             280             285

Tyr Glu Asp Leu Glu Ala Gln Pro Arg Gly Glu Glu Ala Gln Leu
             290             295             300

Ser Gly Asp Gln Leu Pro Phe Val Met Glu Glu Leu Pro Gly Glu
             305             310             315

Gly Gly Asn Gly Arg Ser Glu Gly Gly Glu Ala Ala Gly Gly Pro
             320             325             330

Ala Gln Glu Ser Arg Gln Glu Val Arg Gly Ser Pro Arg Gly Val
             335             340             345

Pro Leu Val Ala Gly Ser Ser Glu Glu Gly Ser Arg Arg Ser Leu
             350             355             360

Lys Asp Ala Tyr Leu Glu Val Trp Arg Leu Val Arg Gly Thr Arg
             365             370             375

Tyr Met Lys Lys Asp Tyr Leu Ile Glu Asn Glu Glu Leu Pro Ser
             380             385             390

Pro


<210> 140
<211> 229
<212> PRT
<213> Homo sapien

<400> 140
 Met Ala Arg Leu Ala Leu Ser Pro Val Pro Ser His Trp Met Val
  1               5              10              15

 Ala Leu Leu Leu Leu Leu Ser Ala Glu Pro Val Pro Ala Ala Arg
             20              25              30

 Ser Glu Asp Arg Tyr Arg Asn Pro Lys Gly Ser Ala Cys Ser Arg
             35              40              45

 Ile Trp Gln Ser Pro Arg Phe Ile Ala Arg Lys Arg Gly Phe Thr
             50              55              60

 Val Lys Met His Cys Tyr Met Asn Ser Ala Ser Gly Asn Val Ser
```

258

Trp Leu Trp Lys Gln Glu Met Asp Glu Asn Pro Gln Gln Leu Lys
                80   85   90

Leu Glu Lys Gly Arg Met Glu Glu Ser Gln Asn Glu Ser Leu Ala
                95   100   105

Thr Leu Thr Ile Gln Gly Ile Arg Phe Glu Asp Asn Gly Ile Tyr
                110   115   120

Phe Cys Gln Gln Lys Cys Asn Asn Thr Ser Glu Val Tyr Gln Gly
                125   130   135

Cys Gly Thr Glu Leu Arg Val Met Gly Phe Ser Thr Leu Ala Gln
                140   145   150

Leu Lys Gln Arg Asn Thr Leu Lys Asp Gly Ile Ile Met Ile Gln
                155   160   165

Thr Leu Leu Ile Ile Leu Phe Ile Ile Val Pro Ile Phe Leu Leu
                170   175   180

Leu Asp Lys Asp Asp Ser Lys Ala Gly Met Glu Glu Asp His Thr
                185   190   195

Tyr Glu Gly Leu Asp Ile Asp Gln Thr Ala Thr Tyr Glu Asp Ile
                200   205   210

Val Thr Leu Arg Thr Gly Glu Val Lys Trp Ser Val Gly Glu His
                215   220   225

Pro Gly Gln Glu

<210> 141
<211> 699
<212> PRT
<213> Homo sapien

<400> 141
 Met Gly Leu Pro Glu Pro Gly Pro Leu Arg Leu Leu Ala Leu Leu
  1   5   10   15

Leu Leu Leu Leu Leu Leu Leu Leu Leu Arg Leu Gln His Leu Ala
                20   25   30

Ala Ala Ala Ala Asp Pro Leu Leu Gly Gly Gln Gly Pro Ala Lys
                35   40   45

Glu Cys Glu Lys Asp Gln Phe Gln Cys Arg Asn Glu Arg Cys Ile
                50   55   60

Pro Ser Val Trp Arg Cys Asp Glu Asp Asp Cys Leu Asp His
                65   70   75

Ser Asp Glu Asp Asp Cys Pro Lys Lys Thr Cys Ala Asp Ser Asp
                80   85   90

259

```
Phe Thr Cys Asp Asn Gly His Cys Ile His Glu Arg Trp Lys Cys
              95                    100                   105

Asp Gly Glu Glu Glu Cys Pro Asp Gly Ser Asp Glu Ser Glu Ala
              110                   115                   120

Thr Cys Thr Lys Gln Val Cys Pro Ala Glu Lys Leu Ser Cys Gly
              125                   130                   135

Pro Thr Ser His Lys Cys Val Pro Ala Ser Trp Arg Cys Asp Gly
              140                   145                   150

Glu Lys Asp Cys Glu Gly Gly Ala Asp Glu Ala Gly Cys Ala Thr
              155                   160                   165

Ser Leu Gly Thr Cys Arg Gly Asp Glu Phe Gln Cys Gly Asp Gly
              170                   175                   180

Thr Cys Val Leu Ala Ile Lys His Cys Asn Gln Glu Gln Asp Cys
              185                   190                   195

Pro Asp Gly Ser Asp Glu Ala Gly Cys Leu Gln Gly Leu Asn Glu
              200                   205                   210

Cys Leu His Asn Asn Gly Gly Cys Ser His Ile Cys Thr Asp Leu
              215                   220                   225

Lys Ile Gly Phe Glu Cys Thr Cys Pro Ala Gly Phe Gln Leu Leu
              230                   235                   240

Asp Gln Lys Thr Cys Gly Asp Ile Asp Glu Cys Lys Asp Pro Asp
              245                   250                   255

Ala Cys Ser Gln Ile Cys Val Asn Tyr Lys Gly Tyr Phe Lys Cys
              260                   265                   270

Glu Cys Tyr Pro Gly Cys Glu Met Asp Leu Leu Thr Lys Asn Cys
              275                   280                   285

Lys Ala Ala Ala Gly Lys Ser Pro Ser Leu Ile Phe Thr Asn Arg
              290                   295                   300

Thr Ser Ala Glu Asp Arg Pro Val Lys Arg Asn Tyr Ser Arg Leu
              305                   310                   315

Ile Pro Met Leu Lys Asn Val Val Ala Leu Asp Val Glu Val Ala
              320                   325                   330

Thr Asn Arg Ile Tyr Trp Cys Asp Leu Ser Tyr Arg Lys Ile Tyr
              335                   340                   345

Ser Ala Tyr Met Asp Lys Ala Ser Asp Pro Lys Glu Arg Glu Val
              350                   355                   360

Leu Ile Asp Glu Gln Leu His Ser Pro Glu Gly Leu Ala Val Asp
              365                   370                   375

Trp Val His Lys His Ile Tyr Trp Thr Asp Ser Gly Asn Lys Thr
```

260

```
                    380                     385                      390
Ile Ser Val Ala Thr Val Asp Gly Gly Arg Arg Arg Thr Leu Phe
                395                     400                      405
Ser Arg Asn Leu Ser Glu Pro Arg Ala Ile Ala Val Asp Pro Leu
                410                     415                     ·420
Arg Gly Phe Met Tyr Trp Ser Asp Trp Gly Asp Gln Ala Lys Ile
                425                     430                      435
Glu Lys Ser Gly Leu Asn Gly Val Asp Arg Gln Thr Leu Val Ser
                440                     445                      450
Asp Asn Ile Glu Trp Pro Asn Gly Ile Thr Leu Asp Leu Leu Ser
                455                     460                      465
Gln Arg Leu Tyr Trp Val Asp Ser Lys Leu His Gln Leu Ser Ser
                470                     475                      480
Ile Asp Phe Ser Gly Gly Asn Arg Lys Thr Leu Ile Ser Ser Thr
                485                     490                      495
Asp Phe Leu Ser His Pro Phe Gly Ile Ala Val Phe Glu Asp Lys
                500                     505                      510
Val Phe Trp Thr Asp Leu Glu Asn Glu Ala Ile Phe Ser Ala Asn
                515                     520                      525
Arg Leu Asn Gly Leu Glu Ile Ser Ile Leu Ala Glu Asn Leu Asn
                530                     535                      540
Asn Pro His Asp Ile Val Ile Phe His Glu Leu Lys Gln Pro Arg
                545                     550                      555
Ala Pro Asp Ala Cys Glu Leu Ser Val Gln Pro Asn Gly Gly Cys
                560                     565                      570
Glu Tyr Leu Cys Leu Pro Ala Pro Gln Ile Ser Ser His Ser Pro
                575                     580                      585
Lys Tyr Thr Cys Ala Cys Pro Asp Thr Met Trp Leu Gly Pro Asp
                590                     595                      600
Met Lys Arg Cys Tyr Arg Asp Ala Asn Glu Asp Ser Lys Met Gly
                605                     610                      615
Ser Thr Val Thr Ala Ala Val Ile Gly Ile Ile Val Pro Ile Val
                620                     625                      630
Val Ile Ala Leu Leu Cys Met Ser Gly Tyr Leu Ile Trp Arg Asn
                635                     640                      645
Trp Lys Arg Lys Asn Thr Lys Ser Met Asn Phe Asp Asn Pro Val
                650                     655                      660
Tyr Arg Lys Thr Thr Glu Glu Glu Asp Glu Asp Glu Leu His Ile
                665                     670                      675
```

261

Gly Arg Thr Ala Gln Ile Gly His Val Tyr Pro Ala Arg Val Ala
              680   685   690

Leu Ser Leu Glu Asp Asp Gly Leu Pro
              695

<210> 142
<211> 287
<212> PRT
<213> Homo sapien

<400> 142
Met Pro Pro Leu Trp Ala Leu Leu Ala Leu Gly Cys Leu Arg Phe
  1   5   10   15

Gly Ser Ala Val Asn Leu Gln Pro Gln Leu Ala Ser Val Thr Phe
              20   25   30

Ala Thr Asn Asn Pro Thr Leu Thr Thr Val Ala Leu Glu Lys Pro
              35   40   45

Leu Cys Met Phe Asp Ser Lys Glu Ala Leu Thr Gly Thr His Glu
              50   55   60

Val Tyr Leu Tyr Val Leu Val Asp Ser Ala Ile Ser Arg Asn Ala
              65   70   75

Ser Val Gln Asp Ser Thr Asn Thr Pro Leu Gly Ser Thr Phe Leu
              80   85   90

Gln Thr Glu Gly Gly Arg Thr Gly Pro Tyr Lys Ala Val Ala Phe
              95   100   105

Asp Leu Ile Pro Cys Ser Asp Leu Pro Ser Leu Asp Ala Ile Gly
              110   115   120

Asp Val Ser Lys Ala Ser Gln Ile Leu Asn Ala Tyr Leu Val Arg
              125   130   135

Val Gly Ala Asn Gly Thr Cys Leu Trp Asp Pro Asn Phe Gln Gly
              140   145   150

Leu Cys Asn Ala Pro Leu Ser Ala Ala Thr Glu Tyr Arg Phe Lys
              155   160   165

Tyr Val Leu Val Asn Met Ser Thr Gly Leu Val Glu Asp Gln Thr
              170   175   180

Leu Trp Ser Asp Pro Ile Arg Thr Asn Gln Leu Thr Pro Tyr Ser
              185   190   195

Thr Ile Asp Thr Trp Pro Gly Arg Arg Ser Gly Gly Met Ile Val
              200   205   210

Ile Thr Ser Ile Leu Gly Ser Leu Pro Phe Phe Leu Leu Val Gly
              215   220   225

Phe Ala Gly Ala Ile Ala Leu Ser Leu Val Asp Met Gly Ser Ser

Asp Gly Glu Thr Thr His Asp Ser Gln Ile Thr Gln Glu Ala Val
                    245   250   255

Pro Lys Ser Leu Gly Ala Ser Glu Ser Ser Tyr Thr Ser Val Asn
                    260   265   270

Arg Gly Pro Pro Leu Asp Arg Ala Glu Val Tyr Ser Ser Lys Leu
                    275   280   285

Gln Asp

<210> 143
<211> 196
<212> PRT
<213> Homo sapien

<400> 143
Met Arg Lys Leu Ile Ala Gly Leu Ile Phe Leu Lys Phe Trp Thr
  1   5   10   15

Tyr Thr Val Arg Ala Ser Thr Asp Leu Pro Gln Thr Glu Asn Cys
                    20   25   30

Phe Gln Tyr Ile His Gln Val Thr Glu Ile Ser Ser Thr Leu Pro
                    35   40   45

Val Ala Leu Leu Arg Asp Glu Val Pro Gly Trp Phe Leu Lys Val
                    50   55   60

Pro Glu Pro Gln Leu Ile Ser Lys Glu Leu Ile Met Leu Thr Glu
                    65   70   75

Val Met Glu Val Trp His Gly Leu Val Ile Ala Val Val Ser Leu
                    80   85   90

Phe Leu Gln Ala Cys Phe Leu Thr Ala Ile Asn Tyr Leu Leu Ser
                    95   100   105

Arg His Met Ala His Lys Ser Glu Gln Ile Leu Lys Ala Ala Ser
                    110   115   120

Leu Gln Val Pro Arg Pro Ser Pro Gly His His His Pro Pro Ala
                    125   130   135

Val Lys Glu Met Lys Glu Thr Gln Thr Glu Arg Asp Ile Pro Met
                    140   145   150

Ser Asp Ser Leu Tyr Arg His Asp Ser Asp Thr Pro Ser Asp Ser
                    155   160   165

Leu Asp Ser Ser Cys Ser Ser Pro Pro Ala Cys Gln Ala Thr Glu
                    170   175   180

Asp Val Asp Tyr Thr Gln Val Val Phe Ser Asp Pro Gly Glu Leu
                    185   190   195

Lys

<400> 144

```
Met Ala Gly Thr Val Arg Thr Ala Cys Leu Val Val Ala Met Leu
 1               5                  10                  15

Leu Ser Leu Asp Phe Pro Gly Gln Ala Gln Pro Pro Pro Pro Pro
                20                  25                  30

Pro Asp Ala Thr Cys His Gln Val Arg Ser Phe Phe Gln Arg Leu
                35                  40                  45

Gln Pro Gly Leu Lys Trp Val Pro Glu Thr Pro Val Pro Gly Ser
                50                  55                  60

Asp Leu Gln Val Cys Leu Pro Lys Gly Pro Thr Cys Cys Ser Arg
                65                  70                  75

Lys Met Glu Glu Lys Tyr Gln Leu Thr Ala Arg Leu Asn Met Glu
                80                  85                  90

Gln Leu Leu Gln Ser Ala Ser Met Glu Leu Lys Phe Leu Ile Ile
                95                  100                 105

Gln Asn Ala Ala Val Phe Gln Glu Ala Phe Glu Ile Val Val Arg
                110                 115                 120

His Ala Lys Asn Tyr Thr Asn Ala Met Phe Lys Asn Asn Tyr Pro
                125                 130                 135

Ser Leu Thr Pro Gln Ala Phe Glu Phe Val Gly Glu Phe Phe Thr
                140                 145                 150

Asp Val Ser Leu Tyr Ile Leu Gly Ser Asp Ile Asn Val Asp Asp
                155                 160                 165

Met Val Asn Glu Leu Phe Asp Ser Leu Phe Pro Val Ile Tyr Thr
                170                 175                 180

Gln Leu Met Asn Pro Gly Leu Pro Asp Ser Ala Leu Asp Ile Asn
                185                 190                 195

Glu Cys Leu Arg Gly Ala Arg Arg Asp Leu Lys Val Phe Gly Asn
                200                 205                 210

Phe Pro Lys Leu Ile Met Thr Gln Val Ser Lys Ser Leu Gln Val
                215                 220                 225

Thr Arg Ile Phe Leu Gln Ala Leu Asn Leu Gly Ile Glu Val Ile
                230                 235                 240

Asn Thr Thr Asp His Leu Lys Phe Ser Lys Asp Cys Gly Arg Met
```

264

```
                245                  250                  255

Leu Thr Arg Met Trp Tyr Cys Ser Tyr Cys Gln Gly Leu Met Met
                260                  265                  270

Val Lys Pro Cys Gly Gly Tyr Cys Asn Val Val Met Gln Gly Cys
                275                  280                  285

Met Ala Gly Val Val Glu Ile Asp Lys Tyr Trp Arg Glu Tyr Ile
                290                  295                  300

Leu Ser Leu Glu Glu Leu Val Asn Gly Met Tyr Arg Ile Tyr Asp
                305                  310                  315

Met Glu Asn Val Leu Leu Gly Leu Phe Ser Thr Ile His Asp Ser
                320                  325                  330

Ile Gln Tyr Val Gln Lys Asn Ala Gly Lys Leu Thr Thr Thr Ile
                335                  340                  345

Gly Lys Leu Cys Ala His Ser Gln Gln Arg Gln Tyr Arg Ser Ala
                350                  355                  360

Tyr Tyr Pro Glu Asp Leu Phe Ile Asp Lys Lys Val Leu Lys Val
                365                  370                  375

Ala His Val Glu His Glu Glu Thr Leu Ser Ser Arg Arg Arg Glu
                380                  385                  390

Leu Ile Gln Lys Leu Lys Ser Phe Ile Ser Phe Tyr Ser Ala Leu
                395                  400                  405

Pro Gly Tyr Ile Cys Ser His Ser Pro Val Ala Glu Asn Asp Thr
                410                  415                  420

Leu Cys Trp Asn Gly Gln Glu Leu Met Glu Arg Tyr Ser Gln Lys
                425                  430                  435

Ala Ala Arg Asn Gly Met Lys Asn Gln Phe Asn Leu His Glu Leu
                440                  445                  450

Lys Met Lys Gly Pro Glu Pro Val Val Ser Gln Ile Ile Asp Lys
                455                  460                  465

Leu Lys His Ile Asn Gln Leu Leu Arg Thr Met Ser Met Pro Lys
                470                  475                  480

Gly Arg Val Leu Asp Lys Asn Leu Asp Glu Glu Gly Phe Glu Ser
                485                  490                  495

Gly Asp Cys Gly Asp Asp Glu Asp Glu Cys Ile Gly Gly Ser Gly
                500                  505                  510

Asp Gly Met Ile Lys Val Lys Asn Gln Leu Arg Phe Leu Ala Glu
                515                  520                  525

Leu Ala Tyr Asp Leu Asp Val Asp Asp Ala Pro Gly Asn Ser Gln
                530                  535                  540
```

265

```
Gln Ala Thr Pro Lys Asp Asn Glu Ile Ser Thr Phe His Asn Leu
                545                 550                 555

Gly Asn Val His Ser Pro Leu Lys Leu Leu Thr Ser Met Ala Ile
                560                 565                 570

Ser Val Val Cys Phe Phe Phe Leu Val His
                575                 580
```

<210> 145
<211> 829
<212> PRT
<213> Homo sapien

<400> 145
```
Met Gly Leu Pro Arg Gly Pro Leu Ala Ser Leu Leu Leu Leu Gln
  1               5                 10                  15

Val Cys Trp Leu Gln Cys Ala Ala Ser Glu Pro Cys Arg Ala Val
                20                  25                  30

Phe Arg Glu Ala Glu Val Thr Leu Glu Ala Gly Gly Ala Glu Gln
                35                  40                  45

Glu Pro Gly Gln Ala Leu Gly Lys Val Phe Met Gly Cys Pro Gly
                50                  55                  60

Gln Glu Pro Ala Leu Phe Ser Thr Asp Asn Asp Asp Phe Thr Val
                65                  70                  75

Arg Asn Gly Glu Thr Val Gln Glu Arg Arg Ser Leu Lys Glu Arg
                80                  85                  90

Asn Pro Leu Lys Ile Phe Pro Ser Lys Arg Ile Leu Arg Arg His
                95                 100                 105

Lys Arg Asp Trp Val Val Ala Pro Ile Ser Val Pro Glu Asn Gly
               110                 115                 120

Lys Gly Pro Phe Pro Gln Arg Leu Asn Gln Leu Lys Ser Asn Lys
               125                 130                 135

Asp Arg Asp Thr Lys Ile Phe Tyr Ser Ile Thr Gly Pro Gly Ala
               140                 145                 150

Asp Ser Pro Pro Glu Gly Val Phe Ala Val Glu Lys Glu Thr Gly
               155                 160                 165

Trp Leu Leu Leu Asn Lys Pro Leu Asp Arg Glu Glu Ile Ala Lys
               170                 175                 180

Tyr Glu Leu Phe Gly His Ala Val Ser Glu Asn Gly Ala Ser Val
               185                 190                 195

Glu Asp Pro Met Asn Ile Ser Ile Ile Val Thr Asp Gln Asn Asp
               200                 205                 210

His Lys Pro Lys Phe Thr Gln Asp Thr Phe Arg Gly Ser Val Leu
```

266

```
                    215                     220                     225
Glu Gly Val Leu Pro Gly Thr Ser Val Met Gln Val Thr Ala Thr
                    230                     235                     240

Asp Glu Asp Asp Ala Ile Tyr Thr Tyr Asn Gly Val Val Ala Tyr
                    245                     250                     255

Ser Ile His Ser Gln Glu Pro Lys Asp Pro His Asp Leu Met Phe
                    260                     265                     270

Thr Ile His Arg Ser Thr Gly Thr Ile Ser Val Ile Ser Ser Gly
                    275                     280                     285

Leu Asp Arg Glu Lys Val Pro Glu Tyr Thr Leu Thr Ile Gln Ala
                    290                     295                     300

Thr Asp Met Asp Gly Asp Gly Ser Thr Thr Thr Ala Val Ala Val
                    305                     310                     315

Val Glu Ile Leu Asp Ala Asn Asp Asn Ala Pro Met Phe Asp Pro
                    320                     325                     330

Gln Lys Tyr Glu Ala His Val Pro Glu Asn Ala Val Gly His Glu
                    335                     340                     345

Val Gln Arg Leu Thr Val Thr Asp Leu Asp Ala Pro Asn Ser Pro
                    350                     355                     360

Ala Trp Arg Ala Thr Tyr Leu Ile Met Gly Gly Asp Asp Gly Asp
                    365                     370                     375

His Phe Thr Ile Thr Thr His Pro Glu Ser Asn Gln Gly Ile Leu
                    380                     385                     390

Thr Thr Arg Lys Gly Leu Asp Phe Glu Ala Lys Asn Gln His Thr
                    395                     400                     405

Leu Tyr Val Glu Val Thr Asn Glu Ala Pro Phe Val Leu Lys Leu
                    410                     415                     420

Pro Thr Ser Thr Ala Thr Ile Val Val His Val Glu Asp Val Asn
                    425                     430                     435

Glu Ala Pro Val Phe Val Pro Pro Ser Lys Val Val Glu Val Gln
                    440                     445                     450

Glu Gly Ile Pro Thr Gly Glu Pro Val Cys Val Tyr Thr Ala Glu
                    455                     460                     465

Asp Pro Asp Lys Glu Asn Gln Lys Ile Ser Tyr Arg Ile Leu Arg
                    470                     475                     480

Asp Pro Ala Gly Trp Leu Ala Met Asp Pro Asp Ser Gly Gln Val
                    485                     490                     495

Thr Ala Val Gly Thr Leu Asp Arg Glu Asp Glu Gln Phe Val Arg
                    500                     505                     510
```

267

```
Asn Asn Ile Tyr Glu Val Met Val Leu Ala Met Asp Asn Gly Ser
            515             520             525

Pro Pro Thr Thr Gly Thr Gly Thr Leu Leu Leu Thr Leu Ile Asp
            530             535             540

Val Asn Asp His Gly Pro Val Pro Glu Pro Arg Gln Ile Thr Ile
            545             550             555

Cys Asn Gln Ser Pro Val Arg His Val Leu Asn Ile Thr Asp Lys
            560             565             570

Asp Leu Ser Pro His Thr Ser Pro Phe Gln Ala Gln Leu Thr Asp
            575             580             585

Asp Ser Asp Ile Tyr Trp Thr Ala Glu Val Asn Glu Glu Gly Asp
            590             595             600

Thr Val Val Leu Ser Leu Lys Lys Phe Leu Lys Gln Asp Thr Tyr
            605             610             615

Asp Val His Leu Ser Leu Ser Asp His Gly Asn Lys Glu Gln Leu
            620             625             630

Thr Val Ile Arg Ala Thr Val Cys Asp Cys His Gly His Val Glu
            635             640             645

Thr Cys Pro Gly Pro Trp Lys Gly Gly Phe Ile Leu Pro Val Leu
            650             655             660

Gly Ala Val Leu Ala Leu Leu Phe Leu Leu Leu Val Leu Leu Leu
            665             670             675

Leu Val Arg Lys Lys Arg Lys Ile Lys Glu Pro Leu Leu Leu Pro
            680             685             . 690

Glu Asp Asp Thr Arg Asp Asn Val Phe Tyr Tyr Gly Glu Glu Gly
            695             700             705

Gly Gly Glu Glu Asp Gln Asp Tyr Asp Ile Thr Gln Leu His Arg
            710             715             720

Gly Leu Glu Ala Arg Pro Glu Val Val Leu Arg Asn Asp Val Ala
            725             730             735

Pro Thr Ile Ile Pro Thr Pro Met Tyr Arg Pro Arg Pro Ala Asn
            740             745             750

Pro Asp Glu Ile Gly Asn Phe Ile Ile Glu Asn Leu Lys Ala Ala
            755             760             765

Asn Thr Asp Pro Thr Ala Pro Pro Tyr Asp Thr Leu Leu Val Phe
            770             775             780

Asp Tyr Glu Gly Ser Gly Ser Asp Ala Ala Ser Leu Ser Ser Leu
            785             790             795

Thr Ser Ser Ala Ser Asp Gln Asp Gln Asp Tyr Asp Tyr Leu Asn
```

268

Glu Trp Gly Ser Arg Phe Lys Lys Leu Ala Asp Met Tyr Gly Gly
              815   820   825

Gly Glu Asp Asp

<210> 146
<211> 462
<212> PRT
<213> Homo sapien

<400> 146
Gly Asp Cys Gly Asp Arg Gly Thr Ala Arg Gly Thr Arg Arg Glu
1   5   10   15

Gly Thr Gly Ile Arg Ser Ser Gly Arg Ala Met Asp Gly Asn Asp
              20   25   30

Asn Val Thr Leu Leu Phe Ala Pro Leu Leu Arg Asp Asn Tyr Thr
              35   40   45

Leu Ala Pro Asn Ala Ser Ser Leu Gly Pro Gly Thr Asp Leu Ala
              50   55   60

Leu Ala Pro Ala Ser Ser Ala Gly Pro Gly Pro Gly Leu Ser Leu
              65   70   75

Gly Pro Gly Pro Ser Phe Gly Phe Ser Pro Gly Pro Thr Pro Thr
              80   85   90

Pro Glu Pro Thr Thr Ser Gly Leu Ala Gly Gly Ala Ala Ser His
              95   100   105

Gly Pro Ser Pro Phe Pro Arg Pro Trp Ala Pro His Ala Leu Pro
              110   115   120

Phe Trp Asp Thr Pro Leu Asn His Gly Leu Asn Val Phe Val Gly
              125   130   135

Ala Ala Leu Cys Ile Thr Met Leu Gly Leu Gly Cys Thr Val Asp
              140   145   150

Val Asn His Phe Gly Ala His Val Arg Arg Pro Val Gly Ala Leu
              155   160   165

Leu Ala Ala Leu Cys Gln Phe Gly Leu Leu Pro Leu Leu Ala Phe
              170   175   180

Leu Leu Ala Leu Ala Phe Lys Leu Asp Glu Val Ala Ala Val Ala
              185   190   195

Val Leu Leu Cys Gly Cys Cys Pro Gly Gly Asn Leu Ser Asn Leu
              200   205   210

Met Ser Leu Leu Val Asp Gly Asp Met Asn Leu Ser Ile Ile Met
              215   220   225

269

Thr Ile Ser Ser Thr Leu Leu Ala Leu Val Leu Met Pro Leu Cys
                230   235   240

Leu Trp Ile Tyr Ser Trp Ala Trp Ile Asn Thr Pro Ile Val Gln
                245   250   255

Leu Leu Pro Leu Gly Thr Val Thr Leu Thr Leu Cys Ser Thr Leu
                260   265   270

Ile Pro Ile Gly Leu Gly Val Phe Ile Arg Tyr Lys Tyr Ser Arg
                275   280   285

Val Ala Asp Tyr Ile Val Lys Val Ser Leu Trp Ser Leu Leu Val
                290   295   300

Thr Leu Val Val Leu Phe Ile Met Thr Gly Thr Met Leu Gly Pro
                305   310   315

Glu Leu Leu Ala Ser Ile Pro Ala Ala Val Tyr Val Ile Ala Ile
                320   325   330

Phe Met Pro Leu Ala Gly Tyr Ala Ser Gly Tyr Gly Leu Ala Thr
                335   340   345

Leu Phe His Leu Pro Pro Asn Cys Lys Arg Thr Val Cys Leu Glu
                350   355   360

Thr Gly Ser Gln Asn Val Gln Leu Cys Thr Ala Ile Leu Lys Leu
                365   370   375

Ala Phe Pro Pro Gln Phe Ile Gly Ser Met Tyr Met Phe Pro Leu
                380   385   390

Leu Tyr Ala Leu Phe Gln Ser Ala Glu Ala Gly Ile Phe Val Leu
                395   400   405

Ile Tyr Lys Met Tyr Gly Ser Glu Met Leu His Lys Arg Asp Pro
                410   415   420

Leu Asp Glu Asp Glu Asp Thr Asp Ile Ser Tyr Lys Lys Leu Lys
                425   430   435

Glu Glu Glu Met Ala Asp Thr Ser Tyr Gly Thr Val Lys Ala Glu
                440   445   450

Asn Ile Ile Met Met Glu Thr Ala Gln Thr Ser Leu
                455   460

<210> 147
<211> 335
<212> PRT
<213> Homo sapien

<400> 147
 Met Val Arg Arg Asp Arg Leu Arg Arg Met Arg Glu Trp Trp Val
   1   5   10   15

 Gln Val Gly Leu Leu Ala Val Pro Leu Leu Ala Ala Tyr Leu His

```
                20                      25                      30
Ile Pro Pro Pro Gln Leu Ser Pro Ala Leu His Ser Trp Lys Ser
                35                      40                      45
Ser Gly Lys Phe Phe Thr Tyr Lys Gly Leu Arg Ile Phe Tyr Gln
                50                      55                      60
Asp Ser Val Gly Val Val Gly Ser Pro Glu Ile Val Val Leu Leu
                65                      70                      75
His Gly Phe Pro Thr Ser Ser Tyr Asp Trp Tyr Lys Ile Trp Lys
                80                      85                      90
Gly Leu Thr Leu Arg Phe His Arg Val Ile Ala Leu Asp Phe Leu
                95                      100                     105
Gly Phe Gly Phe Ser Asp Lys Pro Arg Pro His His Tyr Ser Ile
                110                     115                     120
Phe Glu Gln Ala Ser Ile Val Glu Ala Leu Leu Arg His Leu Gly
                125                     130                     135
Leu Gln Asn Arg Arg Ile Asn Leu Leu Ser His Asp Tyr Gly Asp
                140                     145                     150
Ile Val Ala Gln Glu Leu Leu Tyr Arg Tyr Lys Gln Asn Arg Ser
                155                     160                     165
Gly Arg His Thr Ile Lys Ser Leu Cys Leu Ser Asn Gly Gly Ile
                170                     175                     180
Phe Pro Glu Thr His Arg Pro Leu Leu Leu Gln Lys Leu Leu Lys
                185                     190                     195
Asp Gly Gly Val Leu Ser Pro Ile Leu Thr Arg Leu Met Asn Phe
                200                     205                     210
Phe Val Phe Ser Arg Gly Leu Thr Pro Val Phe Gly Pro Tyr Thr
                215                     220                     225
Arg Pro Ser Glu Ser Glu Leu Trp Asp Met Trp Ala Gly Ile Arg
                230                     235                     240
Asn Asn Asp Gly Asn Leu Val Ile Asp Ser Leu Leu Gln Tyr Ile
                245                     250                     255
Asn Gln Arg Lys Lys Phe Arg Arg Arg Trp Val Gly Ala Leu Ala
                260                     265                     270
Ser Val Thr Ile Pro Ile His Phe Ile Tyr Gly Pro Leu Asp Pro
                275                     280                     285
Val Asn Pro Tyr Pro Glu Phe Leu Glu Leu Tyr Arg Lys Thr Leu
                290                     295                     300
Pro Arg Ser Thr Val Ser Ile Leu Asp Asp His Ile Ser His Tyr
                305                     310                     315
```

271

```
Pro Gln Leu Glu Asp Pro Met Gly Phe Leu Asn Ala Tyr Met Gly
            320             325                 330

Phe Ile Asn Ser Phe
            335

<210> 148
<211> 1537
<212> PRT
<213> Homo sapien

<400> 148
 Gly Trp Thr Ser His Leu Ser Asn Cys Gly Glu Ser Asn Arg Pro
  1               5                  10                  15

 Pro Lys Glu Arg Ser Cys Phe Arg Val Cys Asp Trp His Ser Asp
                 20                  25                  30

 Leu Phe Gln Trp Glu Val Ser Asp Trp His His Cys Val Leu Val
                 35                  40                  45

 Pro Tyr Ala Arg Gly Glu Val Lys Pro Arg Thr Ala Glu Cys Val
                 50                  55                  60

 Thr Ala Gln His Gly Leu Gln His Arg Met Val Arg Cys Ile Gln
                 65                  70                  75

 Lys Leu Asn Arg Thr Val Val Ala Asn Glu Ile Cys Glu His Phe
                 80                  85                  90

 Ala Leu Gln Pro Pro Thr Glu Gln Ala Cys Leu Ile Pro Cys Pro
                 95                 100                 105

 Arg Asp Cys Val Val Ser Glu Phe Leu Pro Trp Ser Asn Cys Ser
                110                 115                 120

 Lys Gly Cys Gly Lys Lys Leu Gln His Arg Thr Arg Ala Val Ile
                125                 130                 135

 Ala Pro Pro Leu Phe Gly Gly Leu Gln Cys Pro Asn Leu Thr Glu
                140                 145                 150

 Ser Arg Ala Cys Asp Ala Pro Ile Ser Cys Pro Leu Gly Glu Glu
                155                 160                 165

 Glu Tyr Thr Phe Ser Leu Lys Val Gly Pro Trp Ser Lys Cys Arg
                170                 175                 180

 Leu Pro His Leu Lys Glu Ile Asn Pro Ser Gly Arg Thr Val Leu
                185                 190                 195

 Asp Phe Asn Ser Asp Ser Asn Glu Arg Val Thr Phe Lys His Gln
                200                 205                 210

 Ser Tyr Lys Ala His His His Ser Lys Ser Trp Ala Ile Glu Ile
                215                 220                 225

 Gly Tyr Gln Thr Arg Gln Val Ser Cys Thr Arg Ser Asp Gly Gln
```

272

```
                   230                    235                    240
Asn Ala Met Leu Ser Leu Cys Leu Gln Asp Ser Phe Pro Leu Thr
               245                    250                    255
Val Gln Ser Cys Ile Met Pro Lys Asp Cys Glu Thr Ser Gln Trp
               260                    265                    270
Ser Ser Trp Ser Pro Cys Ser Lys Thr Cys Arg Ser Gly Ser Leu
               275                    280                    285
Leu Pro Gly Phe Arg Ser Arg Ser Arg Asn Val Lys His Met Ala
               290                    295                    300
Ile Gly Gly Gly Lys Glu Cys Pro Glu Leu Leu Glu Lys Glu Ala
               305                    310                    315
Cys Ile Val Glu Gly Glu Leu Leu Gln Gln Cys Pro Arg Tyr Ser
               320                    325                    330
Trp Arg Thr Ser Glu Trp Lys Glu Cys Gln Val Ser Leu Leu Leu
               335                    340                    345
Glu Gln Gln Asp Pro His Trp His Val Thr Gly Pro Val Cys Gly
               350                    355                    360
Gly Gly Ile Gln Thr Arg Glu Val Tyr Cys Ala Gln Ser Val Pro
               365                    370                    375
Ala Ala Ala Ala Leu Arg Ala Lys Glu Val Ser Arg Pro Val Glu
               380                    385                    390
Lys Ala Leu Cys Val Gly Pro Ala Pro Leu Pro Ser Gln Leu Cys
               395                    400                    405
Asn Ile Pro Cys Ser Thr Asp Cys Ile Val Ser Ser Trp Ser Ala
               410                    415                    420
Trp Gly Leu Cys Ile His Glu Asn Cys His Glu Pro Gln Gly Lys
               425                    430                    435
Lys Gly Phe Arg Thr Arg Gln Arg His Val Leu Met Glu Ser Thr
               440                    445                    450
Gly Pro Ala Gly His Cys Pro His Leu Val Glu Ser Val Pro Cys
               455                    460                    465
Glu Asp Pro Met Cys Tyr Arg Trp Leu Ala Ser Glu Gly Ile Cys
               470                    475                    480
Phe Pro Asp His Gly Lys Cys Gly Leu Gly His Arg Ile Leu Lys
               485                    490                    495
Ala Val Cys Gln Asn Asp Arg Gly Glu Asp Val Ser Gly Ser Leu
               500                    505                    510
Cys Pro Val Pro Pro Pro Pro Glu Arg Lys Ser Cys Glu Ile Pro
               515                    520                    525
```

273

```
Cys Arg Met Asp Cys Val Leu Ser Glu Trp Thr Glu Trp Ser Ser
          530                 535                 540

Cys Ser Gln Ser Cys Ser Asn Lys Asn Ser Asp Gly Lys Gln Thr
          545                 550                 555

Arg Ser Arg Thr Ile Leu Ala Leu Ala Gly Glu Gly Gly Lys Pro
          560                 565                 570

Cys Pro Pro Ser Gln Ala Leu Gln Glu His Arg Leu Cys Asn Asp
          575                 580                 585

His Ser Cys Met Gln Leu His Trp Glu Thr Ser Pro Trp Gly Pro
          590                 595                 600

Cys Ser Glu Asp Thr Leu Val Thr Ala Leu Asn Ala Thr Ile Gly
          605                 610                 615

Trp Asn Gly Glu Ala Thr Cys Gly Val Gly Ile Gln Thr Arg Arg
          620                 625                 630

Val Phe Cys Val Lys Ser His Val Gly Gln Val Met Thr Lys Arg
          635                 640                 645

Cys Pro Asp Ser Thr Arg Pro Glu Thr Val Arg Pro Cys Phe Leu
          650                 655                 660

Pro Cys Lys Lys Asp Cys Ile Val Thr Ala Phe Ser Glu Trp Thr
          665                 670                 675

Pro Cys Pro Arg Met Cys Gln Ala Gly Asn Ala Thr Val Lys Gln
          680                 685                 690

Ser Arg Tyr Arg Ile Ile Ile Gln Glu Ala Ala Asn Gly Gly Gln
          695                 700                 705

Glu Cys Pro Asp Thr Leu Tyr Glu Glu Arg Glu Cys Glu Asp Val
          710                 715                 720

Ser Leu Cys Pro Val Tyr Arg Trp Lys Pro Gln Lys Trp Ser Pro
          725                 730                 735

Cys Ile Leu Val Pro Glu Ser Val Trp Gln Gly Ile Thr Gly Ser
          740                 745                 750

Ser Glu Ala Cys Gly Lys Gly Leu Gln Thr Arg Ala Val Ser Cys
          755                 760                 765

Ile Ser Asp Asp Asn Arg Ser Ala Glu Met Met Glu Cys Leu Lys
          770                 775                 780

Gln Thr Asn Gly Met Pro Leu Leu Val Gln Glu Cys Thr Val Pro
          785                 790                 795

Cys Arg Glu Asp Cys Thr Phe Thr Ala Trp Ser Lys Phe Thr Pro
          800                 805                 810

Cys Ser Thr Asn Cys Glu Ala Thr Lys Ser Arg Arg Arg Gln Leu
```

274

Thr Gly Lys Ser Arg Lys Lys Glu Lys Cys Gln Asp Ser Asp Leu
            830   835   840

Tyr Pro Leu Val Glu Thr Glu Leu Cys Pro Cys Asp Glu Phe Ile
            845   850   855

Ser Gln Pro Tyr Gly Asn Trp Ser Asp Cys Ile Leu Pro Glu Gly
            860   865   870

Arg Arg Glu Pro His Arg Gly Leu Arg Val Gln Ala Asp Ser Lys
            875   880   885

Glu Cys Gly Glu Gly Leu Arg Phe Arg Ala Val Ala Cys Ser Asp
            890   895   900

Lys Asn Gly Arg Pro Val Asp Pro Ser Phe Cys Ser Ser Ser Gly
            905   910   915

Tyr Ile Gln Glu Lys Cys Val Ile Pro Cys Pro Phe Asp Cys Lys
            920   925   930

Leu Ser Asp Trp Ser Ser Trp Gly Ser Cys Ser Ser Ser Cys Gly
            935   940   945

Ile Gly Val Arg Ile Arg Ser Lys Trp Leu Lys Glu Lys Pro Tyr
            950   955   960

Asn Gly Gly Arg Pro Cys Pro Lys Leu Asp Leu Lys Asn Gln Ala
            965   970   975

Gln Val His Glu Ala Val Pro Cys Tyr Ser Glu Cys Asn Gln Tyr
            980   985   990

Ser Trp Val Val Glu His Trp Ser Ser Cys Lys Ile Asn Asn Glu
            995   1000   1005

Leu Arg Ser Leu Arg Cys Gly Gly Gly Thr Gln Ser Arg Lys Ile
            1010   1015   1020

Arg Cys Val Asn Thr Ala Asp Gly Glu Gly Gly Ala Val Asp Ser
            1025   1030   1035

Asn Leu Cys Asn Gln Asp Glu Ile Pro Pro Glu Thr Gln Ser Cys
            1040   1045   1050

Ser Leu Met Cys Pro Asn Glu Cys Val Met Ser Glu Trp Gly Leu
            1055   1060   1065

Trp Ser Lys Cys Pro Gln Ser Cys Asp Pro His Thr Met Gln Arg
            1070   1075   1080

Arg Thr Arg His Leu Leu Arg Pro Ser Leu Asn Ser Arg Thr Cys
            1085   1090   1095

Ala Glu Asp Ser Gln Val Gln Pro Cys Leu Leu Asn Glu Asn Cys
            1100   1105   1110

```
Phe Gln Phe Gln Tyr Asn Leu Thr Glu Trp Ser Thr Cys Gln Leu
            1115               1120               1125

Ser Glu Asn Ala Pro Cys Gly Gln Gly Val Arg Thr Arg Leu Leu
            1130               1135               1140

Ser Cys Val Cys Ser Asp Gly Lys Pro Val Ser Met Asp Gln Cys
            1145               1150               1155

Glu Gln His Asn Leu Glu Lys Pro Gln Arg Met Ser Ile Pro Cys
            1160               1165               1170

Leu Val Glu Cys Val Val Asn Cys Gln Leu Ser Gly Trp Thr Ala
            1175               1180               1185

Trp Thr Glu Cys Ser Gln Thr Cys Gly His Gly Gly Arg Met Ser
            1190               1195               1200

Arg Thr Arg Phe Ile Ile Met Pro Thr Gln Gly Glu Gly Arg Pro
            1205               1210               1215

Cys Pro Thr Glu Leu Thr Gln Glu Lys Thr Cys Pro Val Thr Pro
            1220               1225               1230

Cys Tyr Ser Trp Val Leu Gly Asn Trp Ser Ala Cys Lys Leu Glu
            1235               1240               1245

Gly Gly Asp Cys Gly Glu Gly Val Gln Ile Arg Ser Leu Ser Cys
            1250               1255               1260

Met Val His Ser Gly Ser Ile Ser His Ala Ala Gly Arg Val Glu
            1265               1270               1275

Asp Ala Leu Cys Gly Glu Met Pro Phe Gln Asp Ser Ile Leu Lys
            1280               1285               1290

Gln Leu Cys Ser Val Pro Cys Pro Gly Asp Cys His Leu Thr Glu
            1295               1300               1305

Trp Ser Glu Trp Ser Thr Cys Glu Leu Thr Cys Ile Asp Gly Arg
            1310               1315               1320

Ser Phe Glu Thr Val Gly Arg Gln Ser Arg Ser Arg Thr Phe Ile
            1325               1330               1335

Ile Gln Ser Phe Glu Asn Gln Asp Ser Cys Pro Gln Gln Val Leu
            1340               1345               1350

Glu Thr Arg Pro Cys Thr Gly Gly Lys Cys Tyr His Tyr Thr Trp
            1355               1360               1365

Lys Ala Ser Leu Trp Asn Asn Asn Glu Arg Thr Val Trp Cys Gln
            1370               1375               1380

Arg Ser Asp Gly Val Asn Val Thr Gly Gly Cys Ser Pro Gln Ala
            1385               1390               1395

Arg Pro Ala Ala Ile Arg Gln Cys Ile Pro Ala Cys Arg Lys Pro
```

276

```
Phe Ser Tyr Cys Thr Gln Gly Gly Val Cys Gly Cys Glu Lys Gly
            1415                1420                1425

Tyr Thr Glu Ile Met Arg Ser Asn Gly Phe Leu Asp Tyr Cys Met
            1430                1435                1440

Lys Val Pro Gly Ser Glu Asp Lys Lys Ala Asp Val Lys Asn Leu
            1445                1450                1455

Ser Gly Lys Asn Arg Pro Val Asn Ser Lys Ile His Asp Ile Phe
            1460                1465                1470

Lys Gly Trp Ser Leu Gln Pro Leu Asp Pro Asp Gly Arg Val Lys
            1475                1480                1485

Ile Trp Val Tyr Gly Val Ser Gly Gly Ala Phe Leu Ile Met Ile
            1490                1495                1500

Phe Leu Ile Phe Thr Ser Tyr Leu Val Cys Lys Lys Pro Lys Pro
            1505                1510                1515

His Gln Ser Thr Pro Pro Gln Gln Lys Pro Leu Thr Leu Ala Tyr
            1520                1525                1530

Asp Gly Asp Leu Asp Met Asn
            1535
```

<210> 149
<211> 453
<212> PRT
<213> Homo sapien

<400> 149
```
Glu Lys Pro Val Arg Lys Gln Thr Pro Pro Thr Thr Gln Ile His
 1           5                10                15

Cys Gly Pro Pro Lys Pro Val Leu Ser Pro Ser Phe Lys Thr Pro
            20                25                30

Ala Thr Pro Leu Gly Leu Ser Thr Ser Thr Gly His Met Leu Met
            35                40                45

Pro Leu Cys Gly Leu Leu Trp Trp Trp Cys Cys Cys Ser Gly
            50                55                60

Trp Tyr Cys Tyr Gly Leu Cys Ala Pro Ala Pro Gln Met Leu Arg
            65                70                75

His Gln Gly Leu Leu Lys Cys Arg Cys Arg Met Leu Phe Asn Asp
            80                85                90

Leu Lys Val Phe Leu Leu Arg Arg Pro Pro Gln Ala Pro Leu Pro
            95                100               105

Met His Gly Asp Pro Gln Pro Pro Gly Leu Ala Ala Asn Asn Thr
            110               115               120
```

```
Leu Pro Ala Leu Gly Ala Gly Gly Trp Ala Gly Trp Arg Gly Pro
            125             130             135

Arg Glu Val Val Gly Arg Glu Pro Pro Pro Val Pro Pro Pro Pro
            140             145             150

Pro Leu Pro Pro Ser Ser Val Glu Asp Asp Trp Gly Gly Pro Ala
            155             160             165

Thr Glu Pro Pro Ala Ser Leu Leu Ser Ser Ala Ser Ser Asp Asp
            170             175             180

Phe Cys Lys Glu Lys Thr Glu Asp Arg Tyr Ser Leu Gly Ser Ser
            185             190             195

Leu Asp Ser Gly Met Arg Thr Pro Leu Cys Arg Ile Cys Phe Gln
            200             205             210

Gly Pro Glu Gln Gly Glu Leu Leu Ser Pro Cys Arg Cys Asp Gly
            215             220             225

Ser Val Lys Cys Thr His Gln Pro Cys Leu Ile Lys Trp Ile Ser
            230             235             240

Glu Arg Gly Cys Trp Ser Cys Glu Leu Cys Tyr Tyr Lys Tyr His
            245             250             255

Val Ile Ala Ile Ser Thr Lys Asn Pro Leu Gln Trp Gln Ala Ile
            260             265             270

Ser Leu Thr Val Ile Glu Lys Val Gln Val Ala Ala Ala Ile Leu
            275             280             285

Gly Ser Leu Phe Leu Ile Ala Ser Ile Ser Trp Leu Ile Trp Ser
            290             295             300

Thr Phe Ser Pro Ser Ala Arg Trp Gln Arg Gln Asp Leu Leu Phe
            305             310             315

Gln Ile Cys Tyr Gly Met Tyr Gly Phe Met Asp Val Val Cys Ile
            320             325             330

Gly Leu Ile Ile His Glu Gly Pro Ser Val Tyr Arg Ile Phe Lys
            335             340             345

Arg Trp Gln Ala Val Asn Gln Gln Trp Lys Val Leu Asn Tyr Asp
            350             355             360

Lys Thr Lys Asp Leu Glu Asp Gln Lys Ala Gly Gly Arg Thr Asn
            365             370             375

Pro Arg Thr Ser Ser Ser Thr Gln Ala Asn Ile Pro Ser Ser Glu
            380             385             390

Glu Glu Thr Ala Gly Thr Pro Ala Pro Glu Gln Gly Pro Ala Gln
            395             400             405

Ala Ala Gly His Pro Ser Gly Pro Leu Ser His His His Cys Ala
```

Tyr Thr Ile Leu His Ile Leu Ser His Leu Arg Pro His Glu Gln
            425   430   435

Arg Ser Pro Pro Gly Ser Ser Arg Glu Leu Val Met Arg Val Thr
            440   445   450

Thr Val Asn

<210> 150
<211> 981
<212> PRT
<213> Homo sapien

<400> 150
 Gln Glu Gln Gly Asp Lys Met Met Glu Glu Tyr Ser Leu Glu Lys
   1   5   10   15

Asn Glu Arg Ala Cys Ile Asp Phe Ala Ile Ser Ala Lys Pro Leu
            20   25   30

Thr Arg His Met Pro Gln Asn Lys Gln Ser Phe Gln Tyr Arg Met
            35   40   45

Trp Gln Phe Val Val Ser Pro Pro Phe Glu Tyr Thr Ile Met Ala
            50   55   60

Met Ile Ala Leu Asn Thr Ile Val Leu Met Met Lys Phe Tyr Gly
            65   70   75

Ala Ser Val Ala Tyr Glu Asn Ala Leu Arg Val Phe Asn Ile Val
            80   85   90

Phe Thr Ser Leu Phe Ser Leu Glu Cys Val Leu Lys Val Met Ala
            95   100   105

Phe Gly Ile Leu Asn Tyr Phe Arg Asp Ala Trp Asn Ile Phe Asp
            110   115   120

Phe Val Thr Val Leu Gly Ser Ile Thr Asp Ile Leu Val Thr Glu
            125   130   135

Phe Gly Asn Asn Phe Ile Asn Leu Ser Phe Leu Arg Leu Phe Arg
            140   145   150

Ala Ala Arg Leu Ile Lys Leu Leu Arg Gln Gly Tyr Thr Ile Arg
            155   160   165

Ile Leu Leu Trp Thr Phe Val Gln Ser Phe Lys Ala Leu Pro Tyr
            170   175   180

Val Cys Leu Leu Ile Ala Met Leu Phe Phe Ile Tyr Ala Ile Ile
            185   190   195

Gly Met Gln Val Phe Gly Asn Ile Gly Ile Asp Val Glu Asp Glu
            200   205   210

279

```
Asp Ser Asp Glu Asp Glu Phe Gln Ile Thr Glu His Asn Asn Phe
            215             220                     225

Arg Thr Phe Phe Gln Ala Leu Met Leu Leu Phe Arg Ser Ala Thr
            230             235                     240

Gly Glu Ala Trp His Asn Ile Met Leu Ser Cys Leu Ser Gly Lys
            245             250                     255

Pro Cys Asp Lys Asn Ser Gly Ile Leu Thr Arg Glu Cys Gly Asn
            260             265                     270

Glu Phe Ala Tyr Phe Tyr Phe Val Ser Phe Ile Phe Leu Cys Ser
            275             280                     285

Phe Leu Met Leu Asn Leu Phe Val Ala Val Ile Met Asp Asn Phe
            290             295                     300

Glu Tyr Leu Thr Arg Asp Ser Ser Ile Leu Gly Pro His His Leu
            305             310                     315

Asp Glu Tyr Val Arg Val Trp Ala Glu Tyr Asp Pro Ala Ala Cys
            320             325                     330

Gly Arg Ile His Tyr Lys Asp Met Tyr Ser Leu Leu Arg Val Ile
            335             340                     345

Ser Pro Pro Leu Gly Leu Gly Lys Lys Cys Pro His Arg Val Ala
            350             355                     360

Cys Lys Arg Leu Leu Arg Met Asp Leu Pro Val Ala Asp Asp Asn
            365             370                     375

Thr Val His Phe Asn Ser Thr Leu Met Ala Leu Ile Arg Thr Ala
            380             385                     390

Leu Asp Ile Lys Ile Ala Lys Gly Gly Ala Asp Lys Gln Gln Met
            395             400                     405

Asp Ala Glu Leu Arg Lys Glu Met Met Ala Ile Trp Pro Asn Leu
            410             415                     420

Ser Gln Lys Thr Leu Asp Leu Leu Val Thr Pro His Lys Ser Thr
            425             430                     435

Asp Leu Thr Val Gly Lys Ile Tyr Ala Ala Met Met Ile Met Glu
            440             445                     450

Tyr Tyr Arg Gln Ser Lys Ala Lys Lys Leu Gln Ala Met Arg Glu
            455             460                     465

Glu Gln Asp Arg Thr Pro Leu Met Phe Gln Arg Met Glu Pro Pro
            470             475                     480

Ser Pro Thr Gln Glu Gly Gly Pro Gly Gln Asn Ala Leu Pro Ser
            485             490                     495

Thr Gln Leu Asp Pro Gly Gly Ala Leu Met Ala His Glu Ser Gly
```

280

Leu Lys Glu Ser Pro Ser Trp Val Thr Gln Arg Ala Gln Glu Met
                515   520   525

Phe Gln Lys Thr Gly Thr Trp Ser Pro Glu Gln Gly Pro Pro Thr
                530   535   540

Asp Met Pro Asn Ser Gln Pro Asn Ser Gln Ser Val Glu Met Arg
                545   550   555

Glu Met Gly Arg Asp Gly Tyr Ser Asp Ser Glu His Tyr Leu Pro
                560   565   570

Met Glu Gly Gln Gly Arg Ala Ala Ser Met Pro Arg Leu Pro Ala
                575   580   585

Glu Asn Gln Thr Ile Ser Asp Thr Ser Pro Met Lys Arg Ser Ala
                590   595   600

Ser Val Leu Gly Pro Lys Ala Arg Arg Leu Asp Asp Tyr Ser Leu
                605   610   615

Glu Arg Val Pro Pro Glu Glu Asn Gln Arg His His Gln Arg Arg
                620   625   630

Arg Asp Arg Ser His Arg Ala Ser Glu Arg Ser Leu Gly Arg Tyr
                635   640   645

Thr Asp Val Asp Thr Gly Leu Gly Thr Asp Leu Ser Met Thr Thr
                650   655   660

Gln Ser Gly Asp Leu Pro Ser Lys Glu Arg Asp Gln Glu Arg Gly
                665   670   675

Arg Pro Lys Asp Arg Lys His Arg Gln His His His His His His
                680   685   690

His His His His Pro Pro Pro Pro Asp Lys Asp Arg Tyr Ala Gln
                695   700   705

Glu Arg Pro Asp His Gly Arg Ala Arg Ala Arg Asp Gln Arg Trp
                710   715   720

Ser Arg Ser Pro Ser Glu Gly Arg Glu His Met Ala His Arg Gln
                725   730   735

Gly Ser Ser Ser Val Ser Gly Ser Pro Ala Pro Ser Thr Ser Gly
                740   745   750

Thr Ser Thr Pro Arg Arg Gly Arg Arg Gln Leu Pro Gln Thr Pro
                755   760   765

Ser Thr Pro Arg Pro His Val Ser Tyr Ser Pro Val Ile Arg Lys
                770   775   780

Ala Gly Gly Ser Gly Pro Pro Gln Gln Gln Gln Gln Gln Gln Gln
                785   790   795

281

Gln Gln Gln Gln Ala Val Ala Arg Pro Gly Arg Ala Ala Thr Ser
            800   805   810

Gly Pro Arg Arg Tyr Pro Gly Pro Thr Ala Glu Pro Leu Ala Gly
            815   820   825

Asp Arg Pro Pro Thr Gly Gly His Ser Ser Gly Arg Ser Pro Arg
            830   835   840

Met Glu Arg Arg Val Pro Gly Pro Ala Arg Ser Glu Ser Pro Arg
            845   850   855

Ala Cys Arg His Gly Gly Ala Arg Trp Pro Ala Ser Gly Pro His
            860   865   870

Val Ser Glu Gly Pro Pro Gly Pro Arg His His Gly Tyr Tyr Arg
            875   880   885

Gly Ser Asp Tyr Asp Glu Ala Asp Gly Pro Gly Ser Gly Gly Gly
            890   895   900

Glu Glu Ala Met Ala Gly Ala Tyr Asp Ala Pro Pro Pro Val Arg
            905   910   915

His Ala Ser Ser Gly Ala Thr Gly Arg Ser Pro Arg Thr Pro Arg
            920   925   930

Ala Ser Gly Pro Ala Cys Ala Ser Pro Ser Arg His Gly Arg Arg
            935   940   945

Leu Pro Asn Gly Tyr Tyr Pro Ala His Gly Leu Ala Arg Pro Arg
            950   955   960

Gly Pro Gly Ser Arg Lys Gly Leu His Glu Pro Tyr Ser Glu Ser
            965   970   975

Asp Asp Asp Trp Cys Asn
            980

<210> 151
<211> 996
<212> PRT
<213> Homo sapien

<400> 151
Met Arg Pro Val Ala Leu Leu Leu Leu Pro Ser Leu Leu Ala Leu
  1   5   10   15

Leu Ala His Gly Leu Ser Leu Glu Ala Pro Thr Val Gly Lys Gly
            20   25   30

Gln Ala Pro Gly Ile Glu Glu Thr Asp Gly Glu Leu Thr Ala Ala
            35   40   45

Pro Thr Pro Glu Gln Pro Glu Arg Gly Val His Phe Val Thr Thr
            50   55   60

Ala Pro Thr Leu Lys Leu Leu Asn His His Pro Leu Leu Glu Glu

282

Phe Leu His Glu Gly Leu Glu Lys Gly Asp Glu Glu Leu Arg Pro
              80   85   90

Ala Leu Ser Phe Gln Pro Asp Pro Pro Ala Pro Phe Thr Pro Ser
              95   100   105

Pro Leu Pro Arg Leu Ala Asn Gln Asp Ser Arg Pro Val Phe Thr
             110   115   120

Ser Pro Thr Pro Ala Met Ala Ala Val Pro Thr Gln Pro Gln Ser
             125   130   135

Lys Glu Gly Pro Trp Ser Pro Asp Pro Glu Ser Glu Ser Pro Met
             140   145   150

Leu Arg Ile Thr Ala Pro Leu Pro Pro Gly Pro Ser Met Ala Val
             155   160   165

Pro Thr Leu Gly Pro Gly Glu Ile Ala Ser Thr Thr Pro Pro Ser
             170   175   180

Arg Ala Trp Thr Pro Thr Gln Glu Gly Pro Gly Asp Met Gly Arg
             185   190   195

Pro Trp Val Ala Glu Val Val Ser Gln Gly Ala Gly Ile Gly Ile
             200   205   210

Gln Gly Thr Ile Thr Ser Ser Thr Ala Ser Gly Asp Asp Glu Glu
             215   220   225

Thr Thr Thr Thr Thr Thr Ile Ile Thr Thr Thr Ile Thr Thr Val
             230   235   240

Gln Thr Pro Gly Pro Cys Ser Trp Asn Phe Ser Gly Pro Glu Gly
             245   250   255

Ser Leu Asp Ser Pro Thr Asp Leu Ser Ser Pro Thr Asp Val Gly
             260   265   270

Leu Asp Cys Phe Phe Tyr Ile Ser Val Tyr Pro Gly Tyr Gly Val
             275   280   285

Glu Ile Lys Val Lys Asn Ile Ser Leu Arg Glu Gly Glu Thr Val
             290   295   300

Thr Val Glu Gly Leu Gly Gly Pro Asp Pro Leu Pro Leu Ala Asn
             305   310   315

Gln Ser Phe Leu Leu Arg Gly Gln Val Ile Arg Ser Pro Thr His
             320   325   330

Gln Ala Ala Leu Arg Phe Gln Ser Leu Pro Pro Pro Ala Gly Pro
             335   340   345

Gly Thr Phe His Phe His Tyr Gln Ala Tyr Leu Leu Ser Cys His
             350   355   360

283

```
Phe Pro Arg Arg Pro Ala Tyr Gly Asp Val Thr Val Thr Ser Leu
            365             370             375

His Pro Gly Gly Ser Ala Arg Phe His Cys Ala Thr Gly Tyr Gln
            380             385             390

Leu Lys Gly Ala Arg His Leu Thr Cys Leu Asn Ala Thr Gln Pro
            395             400             405

Phe Trp Asp Ser Lys Glu Pro Val Cys Ile Gly Glu Cys Pro Gly
            410             415             420

Val Ile Arg Asn Ala Thr Thr Gly Arg Ile Val Ser Pro Gly Phe
            425             430             435

Pro Gly Asn Tyr Ser Asn Asn Leu Thr Cys His Trp Leu Leu Glu
            440             445             450

Ala Pro Glu Gly Gln Arg Leu His Leu His Phe Glu Lys Val Ser
            455             460             465

Leu Ala Glu Asp Asp Asp Arg Leu Ile Ile Arg Asn Gly Asp Asn
            470             475             480

Val Glu Ala Pro Pro Val Tyr Asp Ser Tyr Glu Val Glu Tyr Leu
            485             490             495

Pro Ile Glu Gly Leu Leu Ser Ser Gly Lys His Phe Phe Val Glu
            500             505             510

Leu Ser Thr Asp Ser Ser Gly Ala Ala Ala Gly Met Ala Leu Arg
            515             520             525

Tyr Glu Ala Phe Gln Gln Gly His Cys Tyr Glu Pro Phe Val Lys
            530             535             540

Tyr Gly Asn Phe Ser Ser Ser Thr Pro Thr Tyr Pro Val Gly Thr
            545             550             555

Thr Val Glu Phe Ser Cys Asp Pro Gly Tyr Thr Leu Glu Gln Gly
            560             565             570

Ser Ile Ile Ile Glu Cys Val Asp Pro His Asp Pro Gln Trp Asn
            575             580             585

Glu Thr Glu Pro Ala Cys Arg Ala Val Cys Ser Gly Glu Ile Thr
            590             595             600

Asp Ser Ala Gly Val Val Leu Ser Pro Asn Trp Pro Glu Pro Tyr
            605             610             615

Gly Arg Gly Gln Asp Cys Ile Trp Gly Val His Val Glu Glu Asp
            620             625             630

Lys Arg Ile Met Leu Asp Ile Arg Val Leu Arg Ile Gly Pro Gly
            635             640             645

Asp Val Leu Thr Phe Tyr Asp Gly Asp Asp Leu Thr Ala Arg Val
```

284

```
                650                    655                    660
Leu Gly Gln Tyr Ser Gly Pro Arg Ser His Phe Lys Leu Phe Thr
                665                    670                    675

Ser Met Ala Asp Val Thr Ile Gln Phe Gln Ser Asp Pro Gly Thr
                680                    685                    690

Ser Val Leu Gly Tyr Gln Gln Gly Phe Val Ile His Phe Phe Glu
                695                    700                    705

Val Pro Arg Asn Asp Thr Cys Pro Glu Leu Pro Glu Ile Pro Asn
                710                    715                    720

Gly Trp Lys Ser Pro Ser Gln Pro Glu Leu Val His Gly Thr Val
                725                    730                    735

Val Thr Tyr Gln Cys Tyr Pro Gly Tyr Gln Val Val Gly Ser Ser
                740                    745                    750

Val Leu Met Cys Gln Trp Asp Leu Thr Trp Ser Glu Asp Leu Pro
                755                    760                    765

Ser Cys Gln Arg Val Thr Ser Cys His Asp Pro Gly Asp Val Glu
                770                    775                    780

His Ser Arg Arg Leu Ile Ser Ser Pro Lys Phe Pro Val Gly Ala
                785                    790                    795

Thr Val Gln Tyr Ile Cys Asp Gln Gly Phe Val Leu Met Gly Ser
                800                    805                    810

Ser Ile Leu Thr Cys His Asp Arg Gln Ala Gly Ser Pro Lys Trp
                815                    820                    825

Ser Asp Arg Ala Pro Lys Cys Leu Leu Glu Gln Leu Lys Pro Cys
                830                    835                    840

His Gly Leu Ser Ala Pro Glu Asn Gly Ala Arg Ser Pro Glu Lys
                845                    850                    855

Gln Leu His Pro Ala Gly Ala Thr Ile His Phe Ser Cys Ala Pro
                860                    865                    870

Gly Tyr Val Leu Lys Gly Gln Ala Ser Ile Lys Cys Val Pro Gly
                875                    880                    885

His Pro Ser His Trp Ser Asp Pro Pro Ile Cys Arg Ala Ala
                890                    895                    900

Ser Leu Asp Gly Ser Thr Thr Val Ala Ala Trp Met Val Ala Lys
                905                    910                    915

Ala Pro Ala Ala Ser Ser Thr Leu Asp Ala Ala His Ile Ala Ala
                920                    925                    930

Ala Ile Phe Leu Pro Leu Val Ala Met Val Leu Leu Val Gly Gly
                935                    940                    945
```

285

```
Val Tyr Phe Tyr Phe Ser Arg Leu Gln Gly Lys Ser Ser Leu Gln
            950                 955                 960

Leu Pro Arg Pro Arg Pro Arg Pro Tyr Asn Arg Ile Thr Ile Glu
            965                 970                 975

Ser Ala Phe Asp Asn Pro Thr Tyr Glu Thr Gly Ser Leu Ser Phe
            980                 985                 990

Ala Gly Asp Glu Arg Ile
            995
```

<210> 152
<211> 844
<212> PRT
<213> Homo. sapien

<400> 152
```
Met Val Gln Lys Ser Arg Asn Gly Gly Val Tyr Pro Gly Pro Ser
  1             5                  10                  15

Gly Glu Lys Lys Leu Lys Val Gly Phe Val Gly Leu Asp Pro Gly
             20                 25                  30

Ala Pro Asp Ser Thr Arg Asp Gly Ala Leu Leu Ile Ala Gly Ser
             35                 40                  45

Glu Ala Pro Lys Arg Gly Ser Ile Leu Ser Lys Pro Arg Ala Gly
             50                 55                  60

Gly Ala Gly Ala Gly Lys Pro Pro Lys Arg Asn Ala Phe Tyr Arg
             65                 70                  75

Lys Leu Gln Asn Phe Leu Tyr Asn Val Leu Glu Arg Pro Arg Gly
             80                 85                  90

Trp Ala Phe Ile Tyr His Ala Tyr Val Phe Leu Leu Val Phe Ser
             95                 100                 105

Cys Leu Val Leu Ser Val Phe Ser Thr Ile Lys Glu Tyr Glu Lys
            110                 115                 120

Ser Ser Glu Gly Ala Leu Tyr Ile Leu Glu Ile Val Thr Ile Val
            125                 130                 135

Val Phe Gly Val Glu Tyr Phe Val Arg Ile Trp Ala Ala Gly Cys
            140                 145                 150

Cys Cys Arg Tyr Arg Gly Trp Arg Gly Arg Leu Lys Phe Ala Arg
            155                 160                 165

Lys Pro Phe Cys Val Ile Asp Ile Met Val Leu Ile Ala Ser Ile
            170                 175                 180

Ala Val Leu Ala Ala Gly Ser Gln Gly Asn Val Phe Ala Thr Ser
            185                 190                 195

Ala Leu Arg Ser Leu Arg Phe Leu Gln Ile Leu Arg Met Ile Arg
```

286

```
                    200                      205                      210
Met Asp Arg Arg Gly Gly Thr Trp Lys Leu Leu Gly Ser Val Val
                215                      220                      225

Tyr Ala His Ser Lys Glu Leu Val Thr Ala Trp Tyr Ile Gly Phe
                230                      235                      240

Leu Cys Leu Ile Leu Ala Ser Phe Leu Val Tyr Leu Ala Glu Lys
                245                      250                      255

Gly Glu Asn Asp His Phe Asp Thr Tyr Ala Asp Ala Leu Trp Trp
                260                      265                      270

Gly Leu Ile Thr Leu Thr Thr Ile Gly Tyr Gly Asp Lys Tyr Pro
                275                      280                      285

Gln Thr Trp Asn Gly Arg Leu Leu Ala Ala Thr Phe Thr Leu Ile
                290                      295                      300

Gly Val Ser Phe Phe Ala Leu Pro Ala Gly Ile Leu Gly Ser Gly
                305                      310                      315

Phe Ala Leu Lys Val Gln Glu Gln His Arg Gln Lys His Phe Glu
                320                      325                      330

Lys Arg Arg Asn Pro Ala Ala Gly Leu Ile Gln Ser Ala Trp Arg
                335                      340                      345

Phe Tyr Ala Thr Asn Leu Ser Arg Thr Asp Leu His Ser Thr Trp
                350                      355                      360

Gln Tyr Tyr Glu Arg Thr Val Thr Val Pro Met Tyr Arg Leu Ile
                365                      370                      375

Pro Pro Leu Asn Gln Leu Glu Leu Leu Arg Asn Leu Lys Ser Lys
                380                      385                      390

Ser Gly Leu Ala Phe Arg Lys Asp Pro Pro Pro Glu Pro Ser Pro
                395                      400                      405

Ser Gln Lys Val Ser Leu Lys Asp Arg Val Phe Ser Ser Pro Arg
                410                      415                      420

Gly Val Ala Ala Lys Gly Lys Gly Ser Pro Gln Ala Gln Thr Val
                425                      430                      435

Arg Arg Ser Pro Ser Ala Asp Gln Ser Leu Glu Asp Ser Pro Ser
                440                      445                      450

Lys Val Pro Lys Ser Trp Ser Phe Gly Asp Arg Ser Arg Ala Arg
                455                      460                      465

Gln Ala Phe Arg Ile Lys Gly Ala Ala Ser Arg Gln Asn Ser Glu
                470                      475                      480

Glu Ala Ser Leu Pro Gly Glu Asp Ile Val Asp Asp Lys Ser Cys
                485                      490                      495
```

287

```
Pro Cys Glu Phe Val Thr Glu Asp Leu Thr Pro Gly Leu Lys Val
            500             505             510

Ser Ile Arg Ala Val Cys Val Met Arg Phe Leu Val Ser Lys Arg
            515             520             525

Lys Phe Lys Glu Ser Leu Arg Pro Tyr Asp Val Met Asp Val Ile
            530             535             540

Glu Gln Tyr Ser Ala Gly His Leu Asp Met Leu Ser Arg Ile Lys
            545             550             555

Ser Leu Gln Ser Arg Val Asp Gln Ile Val Gly Arg Gly Pro Ala
            560             565             570

Ile Thr Asp Lys Asp Arg Thr Lys Gly Pro Ala Glu Ala Glu Leu
            575             580             585

Pro Glu Asp Pro Ser Met Met Gly Arg Leu Gly Lys Val Glu Lys
            590             595             600

Gln Val Leu Ser Met Glu Lys Lys Leu Asp Phe Leu Val Asn Ile
            605             610             615

Tyr Met Gln Arg Met Gly Ile Pro Pro Thr Glu Thr Glu Ala Tyr
            620             625             630

Phe Gly Ala Lys Glu Pro Glu Pro Ala Pro Pro Tyr His Ser Pro
            635             640             645

Glu Asp Ser Arg Glu His Val Asp Arg His Gly Cys Ile Val Lys
            650             655             660

Ile Val Arg Ser Ser Ser Ser Thr Gly Gln Lys Asn Phe Ser Ala
            665             670             675

Pro Pro Ala Ala Pro Pro Val Gln Cys Pro Pro Ser Thr Ser Trp
            680             685             690

Gln Pro Gln Ser His Pro Arg Gln Gly His Gly Thr Ser Pro Val
            695             700             705

Gly Asp His Gly Ser Leu Val Arg Ile Pro Pro Pro Pro Ala His
            710             715             720

Glu Arg Ser Leu Ser Ala Tyr Gly Gly Gly Asn Arg Ala Ser Met
            725             730             735

Glu Phe Leu Arg Gln Glu Asp Thr Pro Gly Cys Arg Pro Pro Glu
            740             745             750

Gly Thr Leu Arg Asp Ser Asp Thr Ser Ile Ser Ile Pro Ser Val
            755             760             765

Asp His Glu Glu Leu Glu Arg Ser Phe Ser Gly Phe Ser Ile Ser
            770             775             780

Gln Ser Lys Glu Asn Leu Asp Ala Leu Asn Ser Cys Tyr Ala Ala
```

288

```
                    785                     790                     795
Val Ala Pro Cys Ala Lys Val Arg Pro Tyr Ile Ala Glu Gly Glu
                800                     805                     810

Ser Asp Thr Asp Ser Asp Leu Cys Thr Pro Cys Gly Pro Pro Pro
                815                     820                     825

Arg Ser Ala Thr Gly Glu Gly Pro Phe Gly Asp Val Gly Trp Ala
                830                     835                     840

Gly Pro Arg Lys


<210> 153
<211> 415
<212> PRT
<213> Homo sapien

<400> 153
Met Val Phe Ala His Arg Met Asp Asn Ser Lys Pro His Leu Ile
  1               5                    10                      15

Ile Pro Thr Leu Leu Val Pro Leu Gln Asn Arg Ser Cys Thr Glu
                 20                     25                     30

Thr Ala Thr Pro Leu Pro Ser Gln Tyr Leu Met Glu Leu Ser Glu
                 35                     40                     45

Glu His Ser Trp Met Ser Asn Gln Thr Asp Leu His Tyr Val Leu
                 50                     55                     60

Lys Pro Gly Glu Val Ala Thr Ala Ser Ile Phe Phe Gly Ile Leu
                 65                     70                     75

Trp Leu Phe Ser Ile Phe Gly Asn Ser Leu Val Cys Leu Val Ile
                 80                     85                     90

His Arg Ser Arg Arg Thr Gln Ser Thr Thr Asn Tyr Phe Val Val
                 95                    100                    105

Ser Met Ala Cys Ala Asp Leu Leu Ile Ser Val Ala Ser Thr Pro
                110                    115                    120

Phe Val Leu Leu Gln Phe Thr Thr Gly Arg Trp Thr Leu Gly Ser
                125                    130                    135

Ala Thr Cys Lys Val Val Arg Tyr Phe Gln Tyr Leu Thr Pro Gly
                140                    145                    150

Val Gln Ile Tyr Val Leu Leu Ser Ile Cys Ile Asp Arg Phe Tyr
                155                    160                    165

Thr Ile Val Tyr Pro Leu Ser Phe Lys Val Ser Arg Glu Lys Ala
                170                    175                    180

Lys Lys Met Ile Ala Ala Ser Trp Ile Phe Asp Ala Gly Phe Val
                185                    190                    195
```

289

```
Thr Pro Val Leu Phe Phe Tyr Gly Ser Asn Trp Asp Ser His Cys
            200             205             210

Asn Tyr Phe Leu Pro Ser Ser Trp Glu Gly Thr Ala Tyr Thr Val
            215             220             225

Ile His Phe Leu Val Gly Phe Val Ile Pro Ser Val Leu Ile Ile
            230             235             240

Leu Phe Tyr Gln Lys Val Ile Lys Tyr Ile Trp Arg Ile Gly Thr
            245             250             255

Asp Gly Arg Thr Val Arg Arg Thr Met Asn Ile Val Pro Arg Thr
            260             265             270

Lys Val Lys Thr Ile Lys Met Phe Leu Ile Leu Asn Leu Leu Phe
            275             280             285

Leu Leu Ser Trp Leu Pro Phe His Val Ala Gln Leu Trp His Pro
            290             295             300

His Glu Gln Asp Tyr Lys Lys Ser Ser Leu Val Phe Thr Ala Ile
            305             310             315

Thr Trp Ile Ser Phe Ser Ser Ser Ala Ser Lys Pro Thr Leu Tyr
            320             325             330

Ser Ile Tyr Asn Ala Asn Phe Arg Arg Gly Met Lys Glu Thr Phe
            335             340             345

Cys Met Ser Ser Met Lys Cys Tyr Arg Ser Asn Ala Tyr Thr Ile
            350             355             360

Thr Thr Ser Ser Arg Met Ala Lys Lys Asn Tyr Val Gly Ile Ser
            365             370             375

Glu Ile Pro Ser Met Ala Lys Thr Ile Thr Lys Asp Ser Ile Tyr
            380             385             390

Asp Ser Phe Asp Arg Glu Ala Lys Glu Lys Lys Leu Ala Trp Pro
            395             400             405

Ile Asn Ser Asn Pro Pro Asn Thr Phe Val
            410             415
```

<210> 154
<211> 842
<212> PRT
<213> Homo sapien

<400> 154

```
Met Ala Val Arg Pro Gly Leu Trp Pro Ala Leu Leu Gly Ile Val
 1               5               10               15

Leu Ala Ala Trp Leu Arg Gly Ser Gly Ala Gln Gln Ser Ala Thr
            20              25              30

Val Ala Asn Pro Val Pro Gly Ala Asn Pro Asp Leu Leu Pro His
```

```
                35                    40                    45
Phe Leu Val Glu Pro Glu Asp Val Tyr Ile Val Lys Asn Lys Pro
                50                    55                    60
Val Leu Leu Val Cys Lys Ala Val Pro Ala Thr Gln Ile Phe Phe
                65                    70                    75
Lys Cys Asn Gly Glu Trp Val Arg Gln Val Asp His Val Ile Glu
                80                    85                    90
Arg Ser Thr Asp Gly Ser Ser Gly Leu Pro Thr Met Glu Val Arg
                95                   100                   105
Ile Asn Val Ser Arg Gln Gln Val Glu Lys Val Phe Gly Leu Glu
               110                   115                   120
Glu Tyr Trp Cys Gln Cys Val Ala Trp Ser Ser Ser Gly Thr Thr
               125                   130                   135
Lys Ser Gln Lys Ala Tyr Ile Arg Ile Ala Tyr Leu Arg Lys Asn
               140                   145                   150
Phe Glu Gln Glu Pro Leu Ala Lys Glu Val Ser Leu Glu Gln Gly
               155                   160                   165
Ile Val Leu Pro Cys Arg Pro Pro Glu Gly Ile Pro Pro Ala Glu
               170                   175                   180
Val Glu Trp Leu Arg Asn Glu Asp Leu Val Asp Pro Ser Leu Asp
               185                   190                   195
Pro Asn Val Tyr Ile Thr Arg Glu His Ser Leu Val Val Arg Gln
               200                   205                   210
Ala Arg Leu Ala Asp Thr Ala Asn Tyr Thr Cys Val Ala Lys Asn
               215                   220                   225
Ile Val Ala Arg Arg Arg Ser Ala Ser Ala Ala Val Ile Val Tyr
               230                   235                   240
Val Asp Gly Ser Trp Ser Pro Trp Ser Lys Trp Ser Ala Cys Gly
               245                   250                   255
Leu Asp Cys Thr His Trp Arg Ser Arg Glu Cys Ser Asp Pro Ala
               260                   265                   270
Pro Arg Asn Gly Gly Glu Glu Cys Gln Gly Thr Asp Leu Asp Thr
               275                   280                   285
Arg Asn Cys Thr Ser Asp Leu Cys Val His Thr Ala Ser Gly Pro
               290                   295                   300
Glu Asp Val Ala Leu Tyr Val Gly Leu Ile Ala Val Ala Val Cys
               305                   310                   315
Leu Val Leu Leu Leu Leu Val Leu Ile Leu Val Tyr Cys Arg Lys
               320                   325                   330
```

291

```
Lys Glu Gly Leu Asp Ser Asp Val Ala Asp Ser Ser Ile Leu Thr
          335               340               345

Ser Gly Phe Gln Pro Val Ser Ile Lys Pro Ser Lys Ala Asp Asn
          350               355               360

Pro His Leu Leu Thr Ile Gln Pro Asp Leu Ser Thr Thr Thr Thr
          365               370               375

Thr Tyr Gln Gly Ser Leu Cys Pro Arg Gln Asp Gly Pro Ser Pro
          380               385               390

Lys Phe Gln Leu Thr Asn Gly His Leu Leu Ser Pro Leu Gly Gly
          395               400               405

Gly Arg His Thr Leu His His Ser Ser Pro Thr Ser Glu Ala Glu
          410               415               420

Glu Phe Val Ser Arg Leu Ser Thr Gln Asn Tyr Phe Arg Ser Leu
          425               430               435

Pro Arg Gly Thr Ser Asn Met Thr Tyr Gly Thr Phe Asn Phe Leu
          440               445               450

Gly Gly Arg Leu Met Ile Pro Asn Thr Gly Ile Ser Leu Leu Ile
          455               460               465

Pro Pro Asp Ala Ile Pro Arg Gly Lys Ile Tyr Glu Ile Tyr Leu
          470               475               480

Thr Leu His Lys Pro Glu Asp Val Arg Leu Pro Leu Ala Gly Cys
          485               490               495

Gln Thr Leu Leu Ser Pro Ile Val Ser Cys Gly Pro Pro Gly Val
          500               505               510

Leu Leu Thr Arg Pro Val Ile Leu Ala Met Asp His Cys Gly Glu
          515               520               525

Pro Ser Pro Asp Ser Trp Ser Leu Arg Leu Lys Lys Gln Ser Cys
          530               535               540

Glu Gly Ser Trp Glu Asp Val Leu His Leu Gly Glu Glu Ala Pro
          545               550               555

Ser His Leu Tyr Tyr Cys Gln Leu Glu Ala Ser Ala Cys Tyr Val
          560               565               570

Phe Thr Glu Gln Leu Gly Arg Phe Ala Leu Val Gly Glu Ala Leu
          575               580               585

Ser Val Ala Ala Ala Lys Arg Leu Lys Leu Leu Leu Phe Ala Pro
          590               595               600

Val Ala Cys Thr Ser Leu Glu Tyr Asn Ile Arg Val Tyr Cys Leu
          605               610               615

His Asp Thr His Asp Ala Leu Lys Glu Val Val Gln Leu Glu Lys
```

292

Gln Leu Gly Gly Gln Leu Ile Gln Glu Pro Arg Val Leu His Phe
              635   640   645

Lys Asp Ser Tyr His Asn Leu Arg Leu Ser Ile His Asp Val Pro
              650   655   660

Ser Ser Leu Trp Lys Ser Lys Leu Leu Val Ser Tyr Gln Glu Ile
              665   670   675

Pro Phe Tyr His Ile Trp Asn Gly Thr Gln Arg Tyr Leu His Cys
              680   685   690

Thr Phe Thr Leu Glu Arg Val Ser Pro Ser Thr Ser Asp Leu Ala
              695   700   705

Cys Lys Leu Trp Val Trp Gln Val Glu Gly Asp Gly Gln Ser Phe
              710   715   720

Ser Ile Asn Phe Asn Ile Thr Lys Asp Thr Arg Phe Ala Glu Leu
              725   730   735

Leu Ala Leu Glu Ser Glu Ala Gly Val Pro Ala Leu Val Gly Pro
              740   745   750

Ser Ala Phe Lys Ile Pro Phe Leu Ile Arg Gln Lys Ile Ile Ser
              755   760   765

Ser Leu Asp Pro Pro Cys Arg Arg Gly Ala Asp Trp Arg Thr Leu
              770   775   780

Ala Gln Lys Leu His Leu Asp Ser His Leu Ser Phe Phe Ala Ser
              785   790   795

Lys Pro Ser Pro Thr Ala Met Ile Leu Asn Leu Trp Glu Ala Arg
              800   805   810

His Phe Pro Asn Gly Asn Leu Ser Gln Leu Ala Ala Ala Val Ala
              815   820   825

Gly Leu Gly Gln Pro Asp Ala Gly Leu Phe Thr Val Ser Glu Ala
              830   835   840

Glu Cys

<210> 155
<211> 1366
<212> PRT
<213> Homo sapien

<400> 155
Met Ala Gln Ala Leu Leu Val Pro Pro Gly Pro Glu Ser Phe Arg
 1   5   10   15

Leu Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Lys Arg Ala Ala
              20   25   30

293

```
Glu Glu Lys Ala Lys Lys Pro Lys Lys Glu Gln Asp Asn Asp Asp
            35              40                  45

Glu Asn Lys Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn
            50              55                  60

Leu Pro Phe Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu
            65              70                  75

Pro Leu Glu Asp Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe
            80              85                  90

Ile Val Met Asn Lys Gly Lys Ala Ile Phe Arg Phe Ser Ala Thr
            95              100                 105

Ser Ala Leu Tyr Ile Leu Thr Pro Leu Asn Pro Val Arg Lys Ile
            110             115                 120

Ala Ile Lys Ile Leu Val His Ser Leu Phe Ser Met Leu Ile Met
            125             130                 135

Cys Thr Ile Leu Thr Asn Cys Val Phe Met Thr Leu Ser Asn Pro
            140             145                 150

Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr Gly Ile Tyr
            155             160                 165

Thr Phe Glu Ser Leu Ile Lys Ile Leu Val Arg Gly Phe Cys Leu
            170             175                 180

Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp Phe
            185             190                 195

Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Ser Leu Gly
            200             205                 210

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys
            215             220                 225

Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
            230             235                 240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
            245             250                 255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met
            260             265                 270

Gly Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser
            275             280                 285

Ala Phe Glu Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp
            290             295                 300

Ser Asn Gly Thr Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp
            305             310                 315

Lys Asp Asn Ile Gly Asp Asp Ser His Phe Tyr Val Leu Asp Gly
```

294

Gln Lys Asp Pro Leu Leu Cys Gly Asn Gly Ser Asp Ala Gly Gln
            335   340   345

Cys Pro Glu Gly Tyr Ile Cys Val Lys Ala Gly Arg Asn Pro Asn
            350   355   360

Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu Ser
            365   370   375

Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln
            380   385   390

Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Thr Ile Phe Phe Val
            395   400   405

Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val Asn Leu Ile Leu
            410   415   420

Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Thr Leu
            425   430   435

Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Leu Glu
            440   445   450

Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala Ala
            455   460   465

Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
            470   475   480

Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser
            485   490   495

Ala Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu
            500   505   510

His Leu Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys
            515   520   525

Ser Glu Ser Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser
            530   535   540

Met Asp Gly Asn Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro
            545   550   555

His Gln Ser Leu Leu Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg
            560   565   570

Arg Asn Ser Lys Thr Ser Ile Phe Ser Phe Arg Gly Arg Ala Lys
            575   580   585

Asp Val Gly Ser Glu Asn Asp Phe Ala Asp Asp Glu His Ser Thr
            590   595   600

Phe Glu Asp Ser Glu Thr Arg Arg Asp Ser Leu Phe Glu Pro His
            605   610   615

```
Arg His Gly Glu Arg Arg Asn Ser Asn Gly Thr Thr Thr Glu Thr
              620             625             630

Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr Gln Ile Ser Met Glu
              635             640             645

Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala Val Ser Ile Ala
              650             655             660

Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu Ser Arg Gln
              665             670             675

Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe Leu Ile
              680             685             690

Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val Asn
              695             700             705

Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
              710             715             720

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met
              725             730             735

Thr Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe
              740             745             750

Thr Gly Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met
              755             760             765

Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly
              770             775             780

Ile Ile Val Ser Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val
              785             790             795

Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe
              800             805             810

Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile Lys Ile
              815             820             825

Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val Leu
              830             835             840

Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe
              845             850             855

Gly Lys Ser Tyr Lys Glu Cys Val Cys Lys Ile Asn Asp Asp Cys
              860             865             870

Thr Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu
              875             880             885

Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp
              890             895             900

Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu Ile Val Phe
```

296

Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe
　　　　　　　920　　　　　　　　925　　　　　　　　930

Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala Ala
　　　　　　　935　　　　　　　　940　　　　　　　　945

Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
　　　　　　　950　　　　　　　　955　　　　　　　　960

Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu
　　　　　　　965　　　　　　　　970　　　　　　　　975

Cys Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile
　　　　　　　980　　　　　　　　985　　　　　　　　990

His Glu Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly
　　　　　　　995　　　　　　　1000　　　　　　　　1005

Ile Glu Ile Ser Lys Ala Leu Asn Tyr Leu Arg Asp Gly Asn Gly
　　　　　　　1010　　　　　　　1015　　　　　　　　1020

Thr Thr Ser Gly Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val
　　　　　　　1025　　　　　　　1030　　　　　　　　1035

Ile Asp Glu Asn Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu
　　　　　　　1040　　　　　　　1045　　　　　　　　1050

Thr Val Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn
　　　　　　　1055　　　　　　　1060　　　　　　　　1065

Leu Asn Thr Glu Glu Phe Ser Ser Glu Ser Glu Leu Glu Glu Ser
　　　　　　　1070　　　　　　　1075　　　　　　　　1080

Lys Glu Lys Leu Asn Ala Thr Ser Ser Ser Glu Gly Ser Thr Val
　　　　　　　1085　　　　　　　1090　　　　　　　　1095

Asp Val Val Leu Pro Arg Glu Gly Glu Gln Ala Glu Thr Glu Pro
　　　　　　　1100　　　　　　　1105　　　　　　　　1110

Glu Glu Asp Leu Lys Pro Glu Ala Cys Phe Thr Glu Gly Cys Ile
　　　　　　　1115　　　　　　　1120　　　　　　　　1125

Lys Lys Phe Pro Phe Cys Gln Val Ser Thr Glu Glu Gly Lys Gly
　　　　　　　1130　　　　　　　1135　　　　　　　　1140

Lys Ile Trp Trp Asn Leu Arg Lys Thr Cys Tyr Ser Ile Val Glu
　　　　　　　1145　　　　　　　1150　　　　　　　　1155

His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser
　　　　　　　1160　　　　　　　1165　　　　　　　　1170

Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Glu Gln Arg Lys
　　　　　　　1175　　　　　　　1180　　　　　　　　1185

Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr
　　　　　　　1190　　　　　　　1195　　　　　　　　1200

Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Phe
                1205   1210   1215

Gln Thr Tyr Phe Thr Asn Ala Trp Cys Arg Leu Asp Phe Leu Ile
                1220   1225   1230

Val Asp Val Ser Leu Val Ser Leu Val Ala Asn Ala Leu Gly Tyr
                1235   1240   1245

Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu
                1250   1255   1260

Arg Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val
                1265   1270   1275

Val Asn Ala Leu Val Gly Ala Ile Pro Ser Ile Met Asn Val Leu
                1280   1285   1290

Leu Val Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val
                1295   1300   1305

Asn Leu Phe Ala Gly Lys Phe Tyr His Cys Val Asn Met Thr Thr
                1310   1315   1320

Gly Asn Met Phe Asp Ile Ser Asp Val Asn Asn Leu Ser Asp Cys
                1325   1330   1335

Gln Ala Leu Gly Lys Gln Ala Arg Trp Lys Asn Val Lys Val Asn
                1340   1345   1350

Phe Asp Asn Val Gly Ala Gly Tyr Leu Ala Leu Leu Gln Val Val
                1355   1360   1365

Ser

<210> 156
<211> 1951
<212> PRT
<213> Homo sapien

<400> 156
Met Ala Gln Ala Leu Leu Val Pro Pro Gly Pro Glu Ser Phe Arg
  1   5   10   15

Leu Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Lys Arg Ala Ala
                20   25   30

Glu Glu Lys Ala Lys Lys Pro Lys Lys Glu Gln Asp Asn Asp Asp
                35   40   45

Glu Asn Lys Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn
                50   55   60

Leu Pro Phe Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu
                65   70   75

Pro Leu Glu Asp Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe

Ile Val Met Asn Lys Gly Lys Ala Ile Phe Arg Phe Ser Ala Thr
                95   100   105

Ser Ala Leu Tyr Ile Leu Thr Pro Leu Asn Pro Val Arg Lys Ile
                110   115   120

Ala Ile Lys Ile Leu Val His Ser Leu Phe Ser Met Leu Ile Met
                125   130   135

Cys Thr Ile Leu Thr Asn Cys Val Phe Met Thr Leu Ser Asn Pro
                140   145   150

Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr Phe Thr Gly Ile Tyr
                155   160   165

Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg Gly Phe Cys Leu
                170   175   180

Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp Leu Asp Phe
                185   190   195

Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Asp Leu Gly
                200   205   210

Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu Lys
                215   220   225

Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
                230   235   240

Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val
                245   250   255

Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met
                260   265   270

Gly Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser
                275   280   285

Ala Phe Glu Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp
                290   295   300

Ser Asn Gly Thr Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp
                305   310   315

Lys Asp Tyr Ile Gly Asp Asp Ser His Phe Tyr Val Leu Asp Gly
                320   325   330

Gln Lys Asp Pro Leu Leu Cys Gly Asn Gly Ser Asp Ala Gly Gln
                335   340   345

Cys Pro Glu Gly Tyr Ile Cys Val Lys Ala Gly Arg Asn Pro Asn
                350   355   360

Tyr Gly Tyr Thr Ser Phe Asp Thr Phe Ser Trp Ala Phe Leu Ser
                365   370   375

299

Leu Phe Arg Leu Met Thr Gln Asp Tyr Trp Glu Asn Leu Tyr Gln
                  380   385   390

Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr Met Ile Phe Phe Val
                  395   400   405

Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val Asn Leu Ile Leu
                  410   415   420

Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn Gln Ala Thr Leu
                  425   430   435

Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met Leu Glu
                  440   445   450

Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala Ala
                  455   460   465

Ser Ala Ala Ser Arg Asp Phe Ser Gly Val Gly Gly Leu Gly Glu
                  470   475   480

Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Gly
                  485   490   495

Ala Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu
                  500   505   510

His Leu Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys
                  515   520   525

Ser Glu Ser Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser
                  530   535   540

Met Asp Gly Asn Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro
                  545   550   555

His Gln Ser Leu Leu Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg
                  560   565   570

Arg Asn Ser Lys Thr Ser Ile Phe Ser Phe Arg Gly Arg Ala Lys
                  575   580   585

Asp Val Gly Ser Glu Asn Asp Phe Ala Asp Asp Glu His Ser Thr
                  590   595   600

Phe Glu Asp Ser Glu Ser Arg Arg Asp Ser Leu Phe Val Pro His
                  605   610   615

Arg His Gly Glu Arg Arg Asn Ser Asn Gly Thr Thr Thr Glu Thr
                  620   625   630

Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr Gln Ile Ser Met Glu
                  635   640   645

Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala Val Ser Ile Ala
                  650   655   660

Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu Ser Arg Gln

300

Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe Leu Ile
                680   685   690

Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val Asn
                695   700   705

Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
                710   715   720

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met
                725   730   735

Thr Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe
                740   745   750

Thr Gly Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met
                755   760   765

Asp Pro Tyr Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly
                770   775   780

Ile Ile Val Ser Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val
                785   790   795

Glu Gly Leu Ser Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe
                800   805   810

Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Met Leu Ile Lys Ile
                815   820   825

Ile Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val Leu
                830   835   840

Ala Ile Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe
                845   850   855

Gly Lys Ser Tyr Lys Glu Cys Val Cys Lys Ile Asn Asp Asp Cys
                860   865   870

Thr Leu Pro Arg Trp His Met Asn Asp Phe Phe His Ser Phe Leu
                875   880   885

Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile Glu Thr Met Trp
                890   895   900

Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu Ile Val Phe
                905   910   915

Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn Leu Phe
                920   925   930

Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala Ala
                935   940   945

Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
                950   955   960

301

```
Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu
            965                 970                 975

Cys Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile
            980                 985                 990

His Glu Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly
            995                 1000                1005

Ile Glu Ile Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly
            ·1010                1015                1020

Thr Thr Ser Gly Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val
            1025                1030                1035

Ile Asp Glu Asn Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu
            1040                1045                1050

Thr Val Thr Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn
            1055                1060                1065

Leu Asn Thr Glu Glu Phe Ser Ser Glu Ser Glu Leu Glu Glu Ser
            1070                1075                1080

Lys Glu Lys Leu Asn Ala Thr Ser Ser Ser Glu Gly Ser Thr Val
            1085                1090                1095

Asp Val Val Leu Pro Arg Glu Gly Glu Gln Ala Glu Thr Glu Pro
            1100                1105                1110

Glu Glu Asp Phe Lys Pro Glu Ala Cys Phe Thr Glu Gly Cys Ile
            1115                1120                1125

Lys Lys Phe Pro Phe Cys Gln Val Ser Thr Glu Glu Gly Lys Gly
            1130                1135                1140

Lys Ile Trp Trp Asn Leu Arg Lys Thr Cys Tyr Ser Ile Val Glu
            1145                1150                1155

His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu Leu Ser
            1160                1165                1170

Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Glu Gln Arg Lys
            1175                1180                1185

Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr
            1190                1195                1200

Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Phe
            1205                1210                1215

·Gln Thr Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile
            1220                1225                1230

Val Asp Val Ser Leu Val Ser Leu Val Ala Asn Ala Leu Gly Tyr
            1235                1240                1245

Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu
```

302

Arg Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val
                    1265   1270   1275

Val Asn Ala Leu Val Gly Ala Ile Pro Ser Ile Met Asn Val Leu
                    1280   1285   1290

Leu Val Cys Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val
                    1295   1300   1305

Asn Leu Phe Ala Gly Lys Phe Tyr His Cys Val Asn Met Thr Thr
                    1310   1315   1320

Gly Asn Met Phe Asp Ile Ser Asp Val Asn Asn Leu Ser Asp Cys
                    1325   1330   1335

Gln Ala Leu Gly Lys Gln Ala Arg Trp Lys Asn Val Lys Val Asn
                    1340   1345   1350

Phe Asp Asn Val Gly Ala Gly Tyr Leu Ala Leu Leu Gln Val Ala
                    1355   1360   1365

Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala Ala Val Asp Ser
                    1370   1375   1380

Arg Asp Val Lys Leu Gln Pro Val Tyr Glu Glu Asn Leu Tyr Met
                    1385   1390   1395

Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe Phe Thr
                    1400   1405   1410

Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln Gln
                    1415   1420   1425

Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln
                    1430   1435   1440

Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro
                    1445   1450   1455

Gln Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe Gln Gly Met Val
                    1460   1465   1470

Phe Asp Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile
                    1475   1480   1485

Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp
                    1490   1495   1500

Gln Gly Lys Tyr Met Thr Leu Val Leu Ser Arg Ile Asn Leu Val
                    1505   1510   1515

Phe Ile Val Leu Phe Thr Gly Glu Phe Val Leu Lys Leu Val Ser
                    1520   1525   1530

Leu Arg His Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe
                    1535   1540   1545

Val Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Met
          1550   1555   1560

Ile Glu Lys Tyr Ser Val Ser Pro Thr Leu Phe Arg Val Ile Arg
          1565   1570   1575

Leu Ala Arg Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys
          1580   1585   1590

Gly Ile Arg Thr Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala
          1595   1600   1605

Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val Met Phe Ile Tyr
          1610   1615   1620

Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys Lys Glu Ala
          1625   1630   1635

Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn Ser Met
          1640   1645   1650

Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly Leu
          1655   1660   1665

Leu Ala Pro Ile Leu Asn Ser Ala Pro Pro Asp Cys Asp Pro Asp
          1670   1675   1680

Thr Ile His Pro Gly Ser Ser Val Lys Gly Asp Arg Gly Asp Pro
          1685   1690   1695

Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe
          1700   1705   1710

Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu Glu Asn Phe
          1715   1720   1725

Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp
          1730   1735   1740

Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala
          1745   1750   1755

Thr Gln Phe Ile Glu Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala
          1760   1765   1770

Leu Asp Pro Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu
          1775   1780   1785

Ile Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys
          1790   1795   1800

Leu Asp Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Cys Glu Ser
          1805   1810   1815

Gly Glu Met Asp Ala Leu Arg Ile Gln Met Glu Asp Arg Phe Met
          1820   1825   1830

Ala Ser Asn Pro Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr

304

Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Ala Ile Ile Gln Arg
          1850   1855   1860

Asn Phe Arg Cys Tyr Leu Leu Lys Gln Arg Leu Lys Asn Ile Ser
          1865   1870   1875

Ser Asn Tyr Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp Leu Pro
          1880   1885   1890

Ile Lys Gln Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser Thr
          1895   1900   1905

Pro Glu Lys Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser
          1910   1915   1920

Tyr Asp Ser Val Thr Lys Pro Asp Lys Glu Lys Phe Glu Lys Asp
          1925   1930   1935

Lys Pro Glu Lys Glu Ser Lys Gly Lys Glu Val Arg Glu Asn Gln
          1940   1945   1950

Lys

<210> 157
<211> 380
<212> PRT
<213> Homo sapien

<400> 157
Met Gly Ala Ala Ala Ala Gln Ala Pro Leu Gly Leu Pro Ala Ala
 1   5   10   15

Ser Ala Arg Leu Leu Leu Leu Ala Thr Ser Val Leu Leu Leu Phe
          20   25   30

Ala Phe Ser Leu Pro Gly Ser Arg Ala Ser Asn Gln Pro Pro Gly
          35   40   45

Gly Gly Gly Gly Thr Gly Gly Asp Cys Pro Gly Gly Lys Gly Lys
          50   55   60

Ser Ile Asn Cys Ser Glu Leu Asn Val Arg Glu Ser Asp Val Arg
          65   70   75

Val Cys Asp Glu Ser Ser Cys Lys Tyr Gly Gly Val Cys Lys Glu
          80   85   90

Asp Gly Asp Gly Leu Lys Cys Ala Cys Gln Phe Gln Cys His Thr
          95   100   105

Asn Tyr Ile Pro Val Cys Gly Ser Asn Gly Asp Thr Tyr Gln Asn
          110   115   120

Glu Cys Phe Leu Arg Arg Ala Ala Cys Lys His Gln Lys Glu Ile
          125   130   135

```
Thr Val Ile Ala Arg Gly Pro Cys Tyr Ser Asp Asn Gly Ser Gly
              140                 145               150

Ser Gly Glu Gly Glu Glu Glu Gly Ser Gly Ala Glu Val His Arg
              155                 160               165

Lys His Ser Lys Cys Gly Pro Cys Lys Tyr Lys Ala Glu Cys Asp
              170                 175               180

Glu Asp Ala Glu Asn Val Gly Cys Val Cys Asn Ile Asp Cys Ser
              185                 190               195

Gly Tyr Ser Phe Asn Pro Val Cys Ala Ser Asp Gly Ser Ser Tyr
              200                 205               210

Asn Asn Pro Cys Phe Val Arg Glu Ala Ser Cys Ile Lys Gln Glu
              215                 220               225

Gln Ile Asp Ile Arg His Leu Gly His Cys Thr Asp Thr Asp Asp
              230                 235               240

Thr Ser Leu Leu Gly Lys Lys Asp Asp Gly Leu Gln Tyr Arg Pro
              245                 250               255

Asp Val Lys Asp Ala Ser Asp Gln Arg Glu Asp Val Tyr Ile Gly
              260                 265               270

Asn His Met Pro Cys Pro Glu Asn Leu Asn Gly Tyr Cys Ile His
              275                 280               285

Gly Lys Cys Glu Phe Ile Tyr Leu Leu Arg Arg Ala Ser Cys Arg
              290                 295               300

Cys Glu Ser Gly Tyr Thr Gly Gln His Cys Glu Lys Thr Asp Phe
              305                 310               315

Ser Ile Leu Tyr Val Val Pro Ser Arg Gln Lys Leu Thr His Val
              320                 325               330

Leu Ile Ala Ala Ile Ile Gly Ala Val Gln Ile Ala Ile Ile Val
              335                 340               345

Ala Ile Val Met Cys Ile Thr Arg Lys Cys Pro Lys Asn Asn Arg
              350                 355               360

Gly Arg Arg Gln Lys Gln Asn Leu Gly His Phe Thr Ser Asp Thr
              365                 370               375

Ser Ser Arg Met Val
              380

<210> 158
<211> 341
<212> PRT
<213> Homo sapien

<400> 158
Met Leu Pro Glu Gln Leu Tyr Phe Leu Gln Ser Pro Pro Glu Glu
```

306

```
 1                    5                        10                       15

Glu Pro Glu Tyr His Pro Asp Ala Ser Ala Gln Glu Leu Asn Val
                 20                  25                  30

Arg Glu Ser Asp Val Arg Val Cys Asp Glu Ser Ser Cys Lys Tyr
                 35                  40                  45

Gly Gly Val Cys Lys Glu Asp Gly Asp Gly Leu Lys Cys Ala Cys
                 50                  55                  60

Gln Phe Gln Cys His Thr Asn Tyr Ile Pro Val Cys Gly Ser Asn
                 65                  70                  75

Gly Asp Thr Tyr Gln Asn Glu Cys Phe Leu Arg Arg Ala Ala Cys
                 80                  85                  90

Lys His Gln Lys Glu Ile Thr Val Ile Ala Arg Gly Pro Cys Tyr
                 95                  100                 105

Ser Asp Asn Gly Ser Gly Ser Gly Glu Gly Glu Glu Glu Gly Ser
                 110                 115                 120

Gly Ala Glu Val His Arg Lys His Ser Lys Cys Gly Pro Cys Lys
                 125                 130                 135

Tyr Lys Ala Glu Cys Asp Glu Asp Ala Glu Asn Val Gly Cys Val
                 140                 145                 150

Cys Asn Ile Asp Cys Ser Gly Tyr Ser Phe Asn Pro Val Cys Ala
                 155                 160                 165

Ser Asp Gly Ser Ser Tyr Asn Asn Pro Cys Phe Val Arg Glu Ala
                 170                 175                 180

Ser Cys Ile Lys Gln Glu Gln Ile Asp Ile Arg His Leu Gly His
                 185                 190                 195

Cys Thr Asp Thr Asp Asp Thr Ser Leu Leu Gly Lys Lys Asp Asp
                 200                 205                 210

Gly Leu Gln Tyr Arg Pro Asp Val Lys Asp Ala Ser Asp Gln Arg
                 215                 220                 225

Glu Asp Val Tyr Ile Gly Asn His Met Pro Cys Pro Glu Asn Leu
                 230                 235                 240

Asn Gly Tyr Cys Ile His Gly Lys Cys Glu Phe Ile Tyr Ser Thr
                 245                 250                 255

Gln Lys Ala Ser Cys Arg Cys Glu Ser Gly Tyr Thr Gly Gln His
                 260                 265                 270

Cys Glu Lys Thr Asp Phe Ser Ile Leu Tyr Val Val Pro Ser Arg
                 275                 280                 285

Gln Lys Leu Thr His Val Leu Ile Ala Ala Ile Ile Gly Ala Val
                 290                 295                 300
```

307

```
Gln Ile Ala Ile Ile Val Ala Ile Val Met Cys Ile Thr Arg Lys
              305                 310                 315

Cys Pro Lys Asn Asn Arg Gly Arg Arg Gln Lys Gln Asn Leu Gly
              320                 325                 330

His Phe Thr Ser Asp Thr Ser Ser Arg Met Val
              335                 340
```